This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

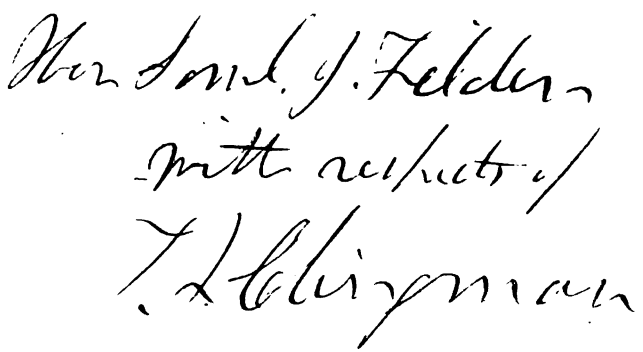
+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

3 3433 08179069 7



SELECTIONS

FROM THE

SPEECHES AND WRITINGS

OF

HON. THOMAS L. CLINGMAN,

OF

NORTH CAROLINA,

WITH

ADDITIONS AND EXPLANATORY NOTES.

RALEIGH:
JOHN NICHOLS, BOOK AND JOB PRINTER, FAYETTEVILLE STREET.
1877.

Checked
May 1913

Entered according to Act of Congress, in the year 1877, by
THOMAS L. CLINGMAN,
in the office of the Librarian of Congress, at Washington.

TILDEN LIBRARY
1895

NEW YORK
PUBLIC
LIBRARY

TABLE OF CONTENTS.

SCIENCE AND CHRISTIANITY, ... 5
RELIGIOUS AND POPULAR ORATORS, ... 23
ADDRESS DELIVERED AT DAVIDSON COLLEGE, NORTH CAROLINA, 39
THE GREAT METEOR OF 1860, ... 53
HUXLEY, DARWIN AND TYNDALL; OR, THE THEORY OF EVOLUTION, ... 60
WATER SPOUTS, ... 68
VOLCANIC ACTION IN NORTH CAROLINA, ... 78
FARMING AND COOKERY, ... 84
ANNUAL ADDRESS BEFORE THE NORTH CAROLINA STATE AGRICULTURAL SOCIETY, ... 90
SPEECH DELIVERED AT THE CHARLOTTE CENTENNIAL, ... 110
THE MOUNTAIN REGION OF NORTH CAROLINA:
- LETTER TO J. S. SKINNER, ESQ., ... 113
- LETTER TO THE EDITOR OF THE HIGHLAND MESSENGER, ... 116
- LETTER FROM PROFESSOR CHARLES UPHAM SHEPARD, ... 119
- LETTER TO THE NORTH CAROLINA LAND COMPANY, ... 121
- EXTRACTS FROM A LETTER TO WILLIAM FRAZIER, ESQ., ... 124
- CLIMATE OF WESTERN NORTH CAROLINA, AND ITS HEALTHFULNESS FOR CONSUMPTIVES AND OTHERS, ... 126
- OLD DIGGINGS FOR MICA IN WESTERN NORTH CAROLINA, ... 130
- MOUNT PISGAH, NORTH CAROLINA, ... 133
- MOUNTAIN SCENERY, ... 136
- GUYOT'S MEASUREMENT OF THE MOUNTAINS OF WESTERN NORTH CAROLINA, ... 138

THE PRINCIPLES OF THE WHIG AND DEMOCRATIC PARTIES, ... 148
MR. CLAY– CAUSES OF HIS DEFEAT, ... 173
WILMOT PROVISO, ... 196
POLITICAL ASPECT OF THE SLAVE QUESTION, ... 197
GENERAL TAYLOR AS A PRESIDENTIAL CANDIDATE, ... 226
JOHN QUINCY ADAMS AND GENERAL TAYLOR, ... 227

MR. CALHOUN'S UNIONISM, ... 229
CLAYTON COMPROMISE, ... 230
ALARMING AGITATION AS TO SLAVERY, ... 230
CORRESPONDENCE WITH FOOTE AND MANGUM, ... 231
POSITION OF THE "NATIONAL INTELLIGENCER," ... 233
MR. TOOMBS' RESOLUTION IN WHIG CAUCUS, ... 234
DEFENCE OF THE SOUTH AGAINST THE AGGRESSIVE MOVEMENT OF THE NORTH, ... 235
MR. CLAY'S CONVERSATION AND CHARACTERISTICS, ... 254
COMPARISON OF CLAY AND WEBSTER, ... 255
MR. WEBSTER'S PECULIARITIES, ... 258
MR. MANGUM, ... 259
PROGRESS OF THE SLAVERY AGITATION, DISCUSSED IN A LETTER TO THE "REPUBLIC." ... 259
WM. B. SHEPARD'S VIEWS, ... 264
NASHVILLE CONVENTION, LETTER ON ... 268
HOWELL COBB AND BARNWELL RHETT, ... 270
CONTROVERSY OF STEPHENS, TOOMBS AND WEED, ... 270
PRESIDENT TAYLOR AND MR. CLAY, ... 272
MR. CLAY'S BILL DEFEATED, ... 273
COMPROMISE OF 1850 PASSED, ... 274
FUTURE POLICY OF THE GOVERNMENT, ... 275
UNION PARTY, ATTEMPT TO FORM IT, ... 287
DUTIES ON RAILROAD IRON AND COMMERCIAL RESTRICTIONS, ... 288
PRESIDENTIAL CONTEST—SCOTT, FILLMORE AND WEBSTER, ... 308
STRUGGLE IN WHIG CAUCUS—LETTER TO THE "REPUBLIC," ... 309
SCOTT'S NOMINATION—GROUNDS OF OPPOSITION TO HIM—LETTER TO DR. LADSON A. MILLS, ... 316
CAUSES OF SCOTT'S DEFEAT STATED, ... 323
SLAVERY IN THE TERRITORIES—KANSAS AND NEBRASKA, ... 334
SPEECH ON THE SAME, ... 336
EXCITEMENT GROWING OUT OF THE KANSAS BILL, AND DINNER TO JOHN KERR, ... 353
AMERICAN OR KNOW NOTHING MOVEMENT, ... 355
PUBLIC EXPENDITURES, ... 356
MEDIATION IN THE EASTERN WAR, ... 363
FOREIGN POLICY—PANAMA AND BLACK WARRIOR CASES—ADMINISTRATION REFUSES TO ACT, ... 375
CRAMPTON'S DISMISSAL, ... 376

BRITISH INTERFERENCE WITH SLAVERY, ... 377
GREAT BRITAIN AND EAST INDIAN TORTURES, ... 379
BRITISH POLICY IN CENTRAL AMERICA AND CUBA, ... 391
SPEECH AGAINST CLAYTON-BULWER TREATY, ... 409
SPEECH AGAINST PROTECTIVE TARIFFS, ... 432
KANSAS—WALKER, BUCHANAN AND DOUGLAS—CONTEST BETWEEN THE TWO LATTER, ... 449
CONTROVERSY BETWEEN DOUGLAS AND JUDGE BLACK, ... 450
JOHN BROWN'S RAID INTO HARPER'S FERRY, ... 451
SPEECH AGAINST THE REVOLUTIONARY MOVEMENT OF THE ANTI-SLAVERY PARTY, ... 451
CONSPIRACY TO DESTROY THE DEMOCRATIC PARTY, ... 484
SPEECH AGAINST THAT MOVEMENT, ... 486
MR. DAVIS' RESOLUTIONS PASSED, ... 507
MOTIVES OF THE ACTORS, ... 507
BUCHANAN, SLIDELL, DAVIS, ... 508
FLOYD'S DISTRIBUTION OF ARMS IN THE SOUTH, ... 510
IMPORTANCE OF THAT MOVEMENT, ... 512
DOUGLAS' PRESIDENTIAL CANVASS, ... 512
DEBATE ON PRESIDENT'S MESSAGE, ... 514
ANDREW JOHNSON, ... 523
PRESIDENT BUCHANAN, ... 526
GENERAL SCOTT, ... 527
SPEECH ON THE STATE OF THE UNION, ... 528
BRITISH VIEWS OF THE SITUATION, ... 550
LETTERS TO THOMAS, OSBORNE, AND OTHERS, ON THE SITUATION, 553
DEBATE ON LINCOLN'S INAUGURAL, ... 556
WAR POLICY OF THE ADMINISTRATION, ... 558
INCREDULITY ABOUT WAR, ... 563
SINGULAR FALLACY, ... 565
POPULAR DELUSIONS, ... 566
CONCLUSION OF THE SLAVERY DISCUSSION, ... 568
SCHEME OF NATIONAL CURRENCY, ... 574
LETTER ON THE SAME, ... 580
INTERVIEW WITH A "HERALD" CORRESPONDENT, ... 587
CAMPAIGN SPEECH AT HENDERSONVILLE, NORTH CAROLINA, ... 593
PUBLIC SPEAKING—HOW IT OUGHT TO BE CONDUCTED, ... 613
MODE OF CHOOSING A PRESIDENT, ... 614
JOINT RESOLUTION TO AMEND THE CONSTITUTION, ... 620

INTRODUCTION.

The determination to make this publication was brought about by frequent calls on me for one or another of the articles embraced in it. Sometimes a gentleman has written to me for a copy of an address or lecture, which he wished to send to his son in college. Another person would ask for an article on a scientific subject, while many sought descriptions of portions of the mountainous regions of North Carolina. Politicians expressed a desire to have a copy of a particular speech which was remembered as having been made in one of the Houses of Congress.

Not being able otherwise to comply with such wishes, I decided to put a number of the articles sought for in the form of a book. To many of the Congressional speeches I have added explanatory remarks that will serve to indicate the condition of affairs which seemed to render such a speech necessary. Important facts can thus be made known, and additional interest be given to what was said. Earnest debates, presenting the prominent points at issue, being a part of the *res gesta*, with proper explanations of the conditions then existing, are far more interesting than any subsequent history, prepared as they [illegible]re. It was the younger Pitt, I think, who said that he would [illegible]ve one of Bolingbroke's speeches as delivered than the lost [illegible] Livy's great history.

[illegible]ost important results are often produced by events known only [illegible] actors concerned in them, which no outsider will ever under- [illegible]xcept through explanations made by those conversant with the [illegible]tions.

In [illegible]aking up the political portions of this publication, such matter only [illegible]s been selected as may, in my judgment, throw light on points that are still interesting to the public.

In the selections it will be seen that there has been no effort to support any particular theory or line of policy. Nor is there any purpose to establish political consistency in the speaker. The only consistency worthy of consideration is consistency to a man's convictions. To be true to the principles recognized as important, is the only object to be desired.

Mere devotion to party, instead of being a merit, is a reproach to a statesman. In fact, no man ever did acquire the character of a statesman who was the mere devotee of a party. To assume, for example, that because a man in 1840 supported General Harrison as the nominee of the Whig party, he was thereby bound to vote for General Scott in 1852, or for Seward, Giddings or Lincoln in 1860, if thus nominated, would be scarcely less absurd than it would be to affirm that because the Mississippi river at its source was limpid, it must be equally clear at its mouth; or to insist that a man who was seen planting corn in April, was inconsistent because he did not continue planting it in December.

By the general judgment of those who knew him intimately, Mr. Clay was regarded as the most public-spirited and patriotic man of his time; and yet, I never knew a man who seemed to be more gratified by receiving applause, nor who appeared more anxious to win in whatever he undertook to accomplish. Nevertheless, whenever the public interest seemed to demand it, he did not hesitate to change his line of action. Repeatedly, in the course of a few weeks, he would modify his position on a most important issue. This, however, was always done to obtain what he deemed the greatest good that could be accomplished.

Again, I have often, when an important issue was presented, heard a man, heard him say, "this may be right, but I took ground [illegible] against it before my people, and I cannot go for it now." [illegible] would oppose it because in some former speech he had expressed a different opinion.

Such men, who were always looking back at their own tracks, struck me as being vastly more contemptible than the peacock, that while it struts, seems to be gazing admiringly at its own tail. In fact, those

individuals who claim that they had never been able to discover new facts to modify their opinions, are universally regarded as the most conceited and stupid of mankind.

In the explanatory statements and notes which follow, I speak in the first person, for two reasons. Insincerity even in what is, perhaps, its most harmless form, affectation, is always disgusting to me. It is also futile, because subterfuges or stratagems to conceal egotism, only serve to render it more conspicuous, as the vanity of the Greek philosopher was seen the more plainly through the holes in his coat.

Again, speaking in the first person is not only more natural, but it also makes a narrative clearer and more interesting. No one regards Benjamin Franklin as especially vain, because he wrote, for publication, a narrative of his life in that style. Sir Samuel Baker's Journey up the White Nile is far more interesting than it would have been if written as histories usually are. When one speaks of what he saw or heard said, he necessarily represents himself as present, and, to some extent, a party to the transaction.

In what I may say, I shall endeavor to avoid repeating anything in the line of mere personal commendation or compliment. If, in some instances such things should be supposed to be intimated, it will, I think, be found that the purpose of the reference was to present some consideration, more or less instructive or interesting in itself, or to illustrate the character of some prominent actor.

With respect to transactions before the late civil war, I feel at liberty to speak with as much freedom of the conversations of persons in relation to public matters, as I would do with reference to the declarations of Julius Cæsar. The transactions of that period have been finished, and are now but the subject of history, and no man has a right to complain of references to his course on public questions, provided he is fairly represented as he then stood or spoke. On the contrary, if he expressed his real opinions, he ought to feel gratified by this reproduction and publication.

Most of what I shall state has either been made public in some mode, or is known to persons now living. If there are some exceptions, then those who are personally acquainted with me know that I

will not state as a fact anything, the accuracy of which I have any reason to doubt. Strangers will give such weight to my statements as they may think proper.

My purpose is to present important facts that may prove instructive, whether they may be deemed advantageous or hurtful to the reputations of individuals. If persons who write histories and biographies would speak with the same impartiality that the Bible manifests, such publications would not only be more truthful than they are, but they would be far more instructive. A fair examination or criticism of a man's life is much more interesting than a mere eulogy.

The first of these papers is intended for humanity; the second for the young men of the United States; and the third is addressed more particularly to the young men of North Carolina.

The miscellaneous articles which follow are arranged without reference to the time of their first publication, but rather in such succession as may be most agreeable to the reader.

The Congressional speeches of course follow in the order of their delivery, as that mode is best calculated to give a just idea of the current of events. The publication as a whole is presented in the hope that it may prove interesting and instructive to the young men of the country.

SCIENCE AND CHRISTIANITY.

A LECTURE

DELIVERED IN NEW YORK, WASHINGTON, RALEIGH, AND AT OTHER POINTS.

By T. L. CLINGMAN.

The subject I am now about to present, was strikingly brought to my mind by a casual conversation in a law office in the city of Washington. A scientific and highly educated foreigner said that no scientific man in Europe believed in the truth of the Christian religion, and that any such person, by expressing a belief in its divine origin, would lose the respect of all men of science in that enlightened part of the world.

After hearing this remark, as I was passing to New York, on the next day, my reflections took the form I am now about to present. To show the relations existing between Modern Positive Science and Christianity, I will present a series of statements and propositions.

First, let it be supposed than an Esquimaux Indian has been brought to the city of New York in mid-winter. Having lived in the Arctic regions where no trees grow, he has only seen wood in the form of a spar from a ship, and been accustomed to regard it as a thing of the highest value. He is, therefore, greatly astonished at the number and size of the trees in the parks, and looks with wonder on their great trunks and leafless limbs. By one of those mishaps that sometimes occur, he is cast into prison, and remains closely immured for a long period.

At length he is released and walks abroad. It is now, however, midsummer, and he is amazed with the change. The trees, all covered with the green foliage of the season, present their broad leaves to his gaze. Remembering their appearance in winter, the present scene seems like the work of magic.

He soon finds himself in the presence of an intelligent and dignified gentleman, a Professor in the University, and thoroughly instructed in all the sciences. Attracted by the intelligence and benevolence of his countenance, the Indian thus addresses him:

"Sir, I am an ignorant Esquimaux, just discharged from prison, and am greatly astonished with what I see around me. Will you allow me, sir, to ask you a few questions?"

"Certainly," replies the philosopher, "for I read your singular case in the papers this morning, and as it is now vacation in the college in which I am a Professor, I have ample leisure."

"How fortunate I am," exclaims the savage, "in meeting a most learned professor, who can explain, without effort, all that perplexes my ignorance. When I first saw these trees, in the winter, their limbs were all naked, while now they are covered with broad and beautiful green leaves. Is this not wonderfully strange?"

"Not in the least," answers the Professor; "on the contrary, it would be strange if they did not have leaves on them, for they are live trees, and all live trees put out leaves in the summer."

"What is a live tree?" says the Esquimaux.

"A live tree," replies the Professor, "is one which has a vital principle in it, that causes it to germinate in the spring, and put out young branches and leaves."

"Most learned Professor," exclaims the delighted savage, "what is that vital principle that produces such wonders as I behold?"

"Why, in fact," the Professor answers, "though science explains almost everything else, it does not disclose what that vital principle is. We only see the effects, but the cause is a hidden mystery."

"How unfortunate!" exclaims the Indian, with a look of disappointment, "that your great science, which explains everything else, should have failed in this, which seems the most wonderful of all. There are, however, other things which appear very strange, which I beg you to explain to me. During my long confinement, in cold weather they gave me a fire, and as I gazed on it, I often wondered what fire was. Do, my friend, as you can so easily, with the aid of your great science, tell me what fire is."

"Fire," answers the Professor, "is combustion attended with the extrication of light and heat."

"I am so ignorant," says the savage; "kind and learned Professor, do tell me what combustion is."

"Combustion," replies the Professor, "is the union of oxygen, which is a supporter of combustion, with the carbon and hydrogen in the fuel."

"But why does the oxygen unite with the carbon and hydrogen?" says the Esquimaux.

"That oyxgen unites with these combustibles is a fact which is observed, but for which no cause can be assigned," answers the Professor.

"Then at least tell me," says the Indian, "what light and heat are, for as these things are extricated, and made manifest, your science can easily explain them."

"Light," replies the Professor, "has been the subject of so much investigation that its properties are now well understood. There is an exceedingly elastic medium which pervades all space, in which undulations are excited by the luminous body, which are propagated to the eye, and cause the perception of vision."

"How delighted I am," exclaims the poor savage, "to learn this; for in my own country when the sun, after so many months of darkness came back to us, and sent a great flood of light over our ices and snows, the beauty of its colors reflected on all sides caused me to dance for joy, and I thought how much I would give to understand what it was that made the scene so glorious. Little did I then hope that I should, in a distant land, meet with a great and learned Professor, who would explain it all to me. Tell me now what is that elastic medium which performs such wonders."

"Science," answers his companion, "does not tell us what that medium is, we only recognize its effects."

"You cannot tell what it is, you say," answers the Indian; "then how do you know that there is any such medium at all?"

"We have no positive knowledge of its existence, but as light is perceived and must have a cause, we can account for what we observe in no other manner than to suppose that there must be a medium of the elasticity and properties necessary to cause the effects we perceive."

Hereupon the Esquimaux burst into a fit of laughter, on recovering from which he said: "Do not imagine, most learned Professor, that I laughed from any want of respect for you, but because your last remark brought to my mind something that happened when I was in prison. I had heard for some time a singular noise above my head, and I asked the man who waited on my cell, if he could tell me the cause of it. "Yes," said he, "there is something up there making a noise." "What is it," I enquired, "is it a man or a dog, or a cat or a rat?" "I don't know what it is," he answered, "but I expect there is something up there which makes the noise." "But do you know that there is anything up there?" I said. "No, I don't," he replied, "but if there is something up there, it could make a noise." Now I laughed, most learned Professor, at the folly of the man who ought merely to have said that he did not know the cause of the noise. Your saying that you did not know that there was a medium which propagated light, but that if there was one possessing certain qualities, it might do it, brought, I know not how, into my mind, the conversation I had with the silly clown."

"But as light, like the vital principle in the trees, is not explained by science, tell me at least what heat is? for that is so familiar and seemingly so near to my feelings, that it will be more easily explained."

The Professor, not without manifesting some signs of impatience, answered: "The old philosophers used to speak of heat as one of the imponderable elements of nature."

"Imponderable; that means it has no weight," said the savage, "but this only makes it more obscure, for if it had weight, I should know one thing about it."

The Professor proceeded: "Tyndall, in a most profound scientific work, has shown that heat is in all cases the equivalent of a certain amount of motion."

"Equivalent, you say, to motion," quickly said the Esquimaux; "ah, that reminds me of what I heard this morning as I came along. One man asked another what he had been doing last year, and the other

answered, that his work had been equivalent to five hundred dollars. As I came along, I said to myself, did he make ten suits of clothes, worth fifty dollars each, or a hundred hats, or did he work on a farm, or at the printing business, and for my life I could not tell what the man had been doing all last year. So that when I am told that heat is equivalent to motion, still I do not know what it is."

"The pain I now feel causes me to ask you to explain something else. An hour ago, while I was looking at one of the stones with which they were paving the street, I carelessly let it slip out of my hand, and it instantly went down to my foot with such force that I feel the pain even yet. Professor, do tell me what caused the stone to go with such violence against my foot."

"That," said the Professor, with a serious look, "was caused by the force of gravity."

"And what is the force of gravity?" said the Indian.

"It is the attractive force which each particle of matter exerts on every other particle, and extends throughout the entire universe, keeping every planet and comet in its proper place, and influencing all material things."

"It is most wonderful!" exclaims his auditor. "Tell me what that attractive force is that is so mighty in its effects."

"You ask me," said the Professor, "what it is beyond the power of science to answer. The universal fact is perceived, but nothing more is, or can be known."

"Then," sorrowfully responds the savage, "all your great science tells me only such things as I can see for myself, but it does not explain what I am most anxious to know. When in my own country I felt the warm glow of the fire, and saw the brilliant light which the great sun cast over the world, I longed to know the cause of these things. Our prophets said that the Great Spirit, by his secret but mighty power that pervaded all space, caused the results daily exhibited. But your science does not tell me how any of these effects are produced. There must be a cause for all these appearances, and as your science shows none, I will go back to the ideas of my ignorant barbarism."

Such is, indeed, all human science! Whatever be the subject it takes hold of, before it moves far in one direction its course is arrested, and it fails to elucidate what it is most anxious to know. Like a fly in a glass jar, in whatever direction it may start, its progress is soon arrested.

I will now present a second scene for consideration.

There was, last evening, a great gathering of the worms at a locality near us. By worms, I mean such as are found in the moist earth, usually called red worms. The meeting was the annual assemblage of their Association for the Advancement of Science, and the occasion derived unusual interest from its being known that some important questions, about which there had long been a difference of opinion, were to be discussed and settled.

The questions were whether certain Englishmen had built of iron a ship called the "Great Eastern," six hundred and eighty feet long. Secondly, whether the Emperor of Germany could bring together a million of armed men. And thirdly, whether the citizens of the United

States had constructed a railroad from the Atlantic to the Pacific ocean, more than three thousand miles long. The fact known that these questions were to be discussed and settled, attracted an unusually large concourse of scientific worms.

There was an especial desire to hear the views of a certain venerable and distinguished philosopher, who had published a work on the universe, so learned and comprehensive that it was a common opinion that the portion of science which he did not know was, in fact, not worth knowing. He was especially noted for his extensive travels, it being asserted that he had traveled at least twenty times his own length, and therefore, as he was six inches long, he had probably traveled in his life not less than one hundred and twenty inches, or ten feet.

On this occasion he arose only after the debate had already taken a wide range, and his exposition of his views was so lucid, and at the same time so logical and accurate, that he carried conviction to the mind of every hearer. He declared that in all his extensive travels he had never seen a ship of any size whatever, and that the existence of one so prodigious as the Great Eastern, was not more probable than that of the gorgons and hydras, invented by the fertile imaginations of the Greeks.

As to the second question about a million of men, he did not believe there had ever been a single man in existence. The jarring of the earth over their heads sometimes, which the ignorant believed to be caused by the tread of a man above, was doubtless due to an earthquake, while the upturning of immense masses of earth at times, so detrimental to many worms, instead of being, as popularly supposed, the effect of a plow in the hands of a man, was rather to be attributed to some convulsion of nature, not yet understood, but which science would, doubtless one of these days, be able to take hold of and explain.

As to the third proposition, if there were no men, of course no railroad three thousand miles long had ever been built by them. After this most convincing and luminous address by the great philosopher, it was unanimously decided that the existence of man was as improbable as that of the genii of eastern romance; that all of the propositions should be rejected as absurdities, and that any one maintaining a different opinion would forfeit the respect of all scientific worms.

How much was this decision worth as an element in determining the truth of the three propositions discussed? I maintain that it ought to be considered as of quite as much value in that respect as are the teachings of science explained after the manner of the positive philosophers of the present day, in deciding the questions which I am about to present.

But it will, perhaps, be said that there is no analogy whatever between the cases, and that the worms could not have any data to rest their decision upon. This is admitted, but I merely affirm, that they might be able to make greater progress in the pursuit of the facts necessary in their case, than can the positivists through their systems in acquiring a knowledge even of the material universe.

The star Sirius is so near us that it is estimated that its rays of light reach the earth in twelve years. If one of these worms were able to

travel two inches in twenty-four hours, he might pass over a distance of more than fifty feet in a year, make one mile in a century, and in five hundred thousand years he would have passed over a distance of five thousand miles. This distance would carry him to Southampton, where I saw the Great Eastern, or even to Berlin, in Germany.

But if a man could travel towards Sirius at the rate of one thousand miles per day, a distance which no man has probably ever passed over in twenty-four hours, he would be traveling two hundred millions of years before he reached the star, or four hundred times longer than the period necessary, to enable the worm to complete his journey. With respect to the comparative length of their lives, the worm would be quite as likely to live one year as the man four hundred, such being the proportions between the length of their journeys.

It may be said, however, that such an obstacle as the Atlantic ocean would positively prevent the journey of the worm. This is admitted, but a still more formidable one bars the way of the man to the star. The worm might make a considerable progress in his journey, but no man has ever gotten ten miles from the earth, or probably ever can.

Herschell discovered stars two thousand times more distant than Sirius, and did not regard even this space as indicating the extent of the material universe. Even of a body comparatively so near us as the sun, the little we know of it, only seem to perplex us. For if as the spectrum analysis teaches us, the heat there is so great that iron, and other like substances, are kept in the condition of incandescent gasses, of what materials are the solid body of the sun composed, and of what substance and fashion are its inhabitants formed? For when we perceive that here upon the earth a single cubic inch of slate has contained more than forty millions of living animals, we hesitate to believe that a body more than twelve hundred thousand times larger than our whole globe, should be absolutely destitute of living beings.

The worm, too, might possibly by contact with a railroad bar, or by touching the side of a ship, learn something of it, but if this star be like our sun, as it is generally conceded, then no man could approach within a distance of several millions of miles of it without his body being converted into gasses by its heat.

It may be suggested that as man is furnished with organs of vision, he possesses a great advantage over the worm. But if man's vision gives him so imperfect a knowledge of the material world, how is it to be assumed that it can afford him any knowledge of spiritual existences? Is he not blind in this respect?

But it may be objected that if man's senses do not enable him to perceive spirits, what evidence have we that such exist. This question brings me to the third proposition in our progress.

If man's senses do not positively or directly perceive spirits, how can he know that such things are realities?

The maintenance of this affirmative proposition is more difficult than was the negation of the two preceding ones.

I believe it can be as fairly and as satisfactorily established as are other propositions regarded as certain in philosophical science.

For example, I have a settled belief, a thorough conviction that spiritual beings exist. This feeling seems to be a part of my nature, so that I cannot remember its origin. But if this belief were mine alone, it would be regarded as an illusion entitled to no more weight than the fancy of an insane person. A similar conviction, however, pervades the minds of the whole human race. The feeling is not confined to the men of my own country, nor even to those of what is called the civilized world. All barbarians, all savages, living either in the remotest continental localities, or the least frequented islands of the ocean possess the same conviction. The chief difference observed between the savage and the civilized man seems to be that the feeling in the former is, if not stronger, at least more controling than it is in the latter. This conviction of the existence of spiritual beings antedates all history, and seems to have influenced the conduct of mankind in every age.

It is idle to say that this is a mere fancy, for mental conditions are as real and their existence may be established by evidence us conclusive as are the material objects of which our senses directly take cognizance. For example, if a question were raised as to whether a music teacher could play a tune, or only make a noise on his violin, if he were to play a familiar air in this assembly, most persons here present would be able to swear with as much confidence that he had played a tune, as that he had held an instrument in his hand.

In other words, we are convinced that a tune faculty exists in the mind. In like manner we know that there are such things as love and anger, though our senses do not directly perceive them. But the faculty of spirituality, or the belief in the existence of spiritual beings, is not less strikingly manifested.

Superficial writers have said that the belief in the existence of spirits was prevalent, because it was early taught to children by nurses and others. A nurse in the fable threatens to throw a crying child to the wolf, but if all nurses habitually did this, is it believed that grown up men in countries where it was known that no wolves existed, would ever feel such terror as ghostly fear inspires? Nurses speak of these things because they feel them strongly, and they impress the minds of children because they are in harmony with their natures.

Though thousands should write of the vanity of love and the folly of anger, yet these feelings would continue to be recognized as a part of human nature. Education can no more easily eradicate a mental faculty, than it could produce one, which nature had not created. If the faculty of spirituality did not exist, man would no more have conceived the idea of spirits than if all mankind were destitute of organs of vision, could they ever have entertained the idea of color.

Spirituality being one of the most important elements of man's nature, like his other faculties, manifests itself in children. In after life these feelings continue in the courageous as well as the timid. The bravest soldiers and sailors constitute no exception. It proves nothing that these emotions are often suppressed. All men dread the pain which wounds produce, but this dread is so subdued that they march into battle by the hundred thousand.

There is another condition of the human mind to be considered in this connection, viz: that quality which obliges it to assign a cause for what it sees. The feeling, or faculty, of causality is one of the strongest intellectual conditions of the mind. If I should chance to meet on the wayside a farmer of ordinary intelligence, and our conversation should take a scientific turn, I might say to him that the absolutely certain or exact sciences, like mathematics, rested on axioms or self-evident propositions. If I should ask him whether it was not true that the whole was equal to all its parts, and that things that were equal to the same thing were not necessarily equal to each other, he would, after a moment's reflection, probably admit that these propositions must be true.

"Then," I might say to him, "do you believe that stone made itself?" as I pointed to a water-worn lump of quartz in the road. He would instantly reply, "No, that stone never made itself." "Are you as sure about that as you are about the truth of the axioms?" "Yes, more so," would perhaps be the reply, "for I had to study a little about your axioms, but as to that stone I am just as sure it never made itself as I am that I see it."

Every human mind has a conviction that there was a cause for the material things it observes, and that the prime cause was some power of a nature different from the substances themselves. The conviction is universal that matter did not originate itself.

But the positive philosopher says you have no right to assume a cause, for you do not know what the cause is, nor have you positive evidence of its existence. I reply to him, "Then on your own principles you have no right to assume that there is an elastic medium through which light is propagated, for you neither know what it is, nor do you perceive its existence." He answers, "Light is apparent, self-evident, and it is necessary to account for it that we assume the existence of a medium." "I admit this, but if it be necessary to assume the existence of an element pervading all space to account for color alone, how much greater is the necessity to assign a cause for the existence of the whole material creation, which all our senses alike concur in perceiving?"

There is another condition or habit of the mind to be considered in this connection, viz: the impression that when things have uniformly existed together, they will not be found separated. Though this conviction is not so palpable as the former one, yet it is of such force that men of science base certain laws of uniformity on it. Let us measure its strength by comparing it with such testimony as men rely on in courts of justice.

A certain scientific Professor (the same person who had the conversation with the Esquimaux Indian) went to the fish market and enquired for a fresh shad. "Here is one," says a man at his stall, "taken out of the water last night." A bystander exclaims, "Professor, do not believe this lying fishmonger, that shad never came out of the water at all, it grew on a tree in the Central Park; you may there see them in great numbers hanging by their tails on the oak trees, and when the wind blows they fall off, and this man fills his basket every morning." The dealer retorts angrily, "That impudent fellow speaks falsely, Pro-

fessor; though I did not take the fish myself I know who did. He is an honest man, and rather than have my word disputed, I will induce him to go up to the City Hall, and he will there be qualified before the commissioner of affidavits, and swear positively that the fish did come out of the water."

"Give yourself no trouble," the amused Professor would say, "for I am as well satisfied that this fish came out of the water and did not grow on a tree as if ten of the best men in New York had sworn to the fact!"

When the Professor has reached the upper part of the city, he is accosted by workmen engaged in leveling the ground.

"Professor, we have found something very strange here, do tell us what it is!"

The Professor, after examing the object, pronounces it a fossil fish. "How can that possibly be Professor, for we found it thirty feet below the surface, and have blasted the rock above it. If that was ever a fish it must have been before Columbus discovered America."

"Yes," answers the Professor, "it was millions of years ago."

"Then, Professor, do you suppose there was any water existing that long ago?"

"Yes, plenty of it."

"But how, Professor, can you know that so many years before you were born?"

"See," said the Professor, "this animal had no legs to walk with, and he had no wings to fly, but he has fins and scales, and I am just as well satisfied that he lived in the water as I am that this shad did, and I told the man who sold it to me, that I felt quite as sure that it had lived in the water, as if ten men had sworn it."

"Professor, see he has something like an eye."

"Certainly," continues the Professor, "he had eyes."

"Then, Professor, do you suppose that there was any light that long ago?"

"Yes," answered the philosopher, "light existed then, the fish had eyes, nature makes nothing in vain, and would not have given it eyes without providing light for them."

Such is the decision of philosophy. It affirms that nature would not disappoint the eye of a reptile, or fail to furnish light for its use. But, while providing objects to gratify all the wants of the lower animals, and giving even to man what all his other faculties and passions require, it failed to make any provision for the exercise of strong feelings that pervade his nature, and control his actions, from infancy to old age, in every clime, and in every condition of his existence!

Sooner than this, I would adopt the philosophy of the little girl, who when the great meteor of July, 1860, was passing across the sky and persons were wondering what it was, said: "Mother, perhaps it is a great angel flying by!" She possibly had heard that on the morning of the resurrection, a mighty angel had descended in the midst of a great earthquake, and had rolled away the stone from the sepulchre, and sat on it with a countenance like lightning, and raiment white as

snow. If so, the words had fallen on a heart fitted to receive such impressions, and it spontaneously made this exclamation.

Mental and moral emotions produce on the mind of man greater impressions than any exhibition of mere material forces, however vast they may be. When the Roman poet exclaims, "*et cuncta terrarum subacta præter atrocem animum Catonis*," our minds are exalted by the contemplation of a great soul, erect and unsubdued, while the whole earth bowed before a conqueror—a conqueror, whose fate inspired the noble words:

"Look then abroad through nature, to the range
Of planets, suns, and adamantine spheres,
Wheeling unshaken through the void immense;
And speak, O man! does this capacious scene
With half that kindling majesty dilate
Thy strong conception, as when Brutus rose
Refulgent from the stroke of Cæsar's fate,
Amid the crowd of patriots; and his arm
Aloft extending like eternal Jove,
When guilt brings down the thunder, called aloud,
On Tully's name, and shook his crimson steel,
And bade the father of his country hail!
For lo! the tyrant prostrate in the dust,
And Rome again is free!"

Grand as are such emotions, they are inferior in depth and strength and universality to spiritual and religious enthusiasm. This, called into action, overrides all else, and carries the minds of men onward with irresistible force. To a king, about to enter into battle, who seeing the adverse army suddenly kneeling in prayer before him, exclaims: See! "they yield;" it is answered—

"Aye; but they bend to higher powers,
And other pardon sue than ours
Upon the spot where they have kneeled,
These men will die or win the field!"

The conviction that there is a power beyond all the material elements around him, which created and controls all things, pervades the mind of man universally, and is stronger and more palpable than his belief in any axiom that science has ever pointed out. It is broader than the whole surface of the earth, deeper than its foundations, and higher and more enduring than those starry worlds that stud the celestial firmament.

If then science, fairly interpreted, declares the existence of a spiritual cause for the material creation, does it indicate the character and purposes of such a being?

Man looks on the solid globe of the earth, considers its immense magnitude, its broad plains, its long mountain chains, rising above the clouds, its great rivers and seemingly boundless ocean, its storms and volcanoes, and the terrific earthquakes which shake its surface into vast fragments; and then casts his eyes upward to the rolling planets and countless suns, which spangle the boundless ethereal space,

and overwhelmed with the impression that the power which created all this must be vast beyond his conceptions of magnitude, he proclaims this power omnipotent.

Again, he sees that this was not the work of power alone, but that there has been joined with it intelligence and system. He examines a small insect, and while considering its minute structure, is astonished to see a manifestation of skill far surpassing the work of any human artificer. Then he observes the larger operations of nature, and the wonderful order in which they are conducted, not only on the earth, but in the motions of the heavenly bodies. The phenomena of nutation and the precession of the equinoxes in their long but regular periods, the movements of cometary and nebular masses, and the motions of the stars, fill him with amazement, and he recognizes the fact that infinite wisdom has been combined with omnipotent power.

What is the third great attribute or quality indicated by the consideration of these facts?

Had there been several creative agencies, then the law of Jupiter might have differed from that of Neptune or Pluto, and in the conflict of their several jurisdictions, jarring elements and chaotic conditions would exist in the border regions. We see, however, not only uniformity of law in the earth itself, but when we consider the effect of the sun's light and heat on the earth's animal and vegetable inhabitants, and the order of its seasons, we know that the power which created the earth also formed the sun and gave uniformity of laws to our whole planetary system.

But far away, immeasurably beyond the limits to which our remotest comet goes, the motions of the binary stars show us that in their revolutions around each other, they are governed by the same law of gravity that prevails on the earth. More wonderful and interesting still is our perception that the light which comes from the most distant stars and nebulæ, is identical in its character with that which reaches us from the sun and other luminous objects near us. It consists of the same seven colors, and in like manner is reflected, refracted, dispersed, and polarized. It teaches us, too, by the spectrum analysis, that a number of the elements in the remotest stars and nebulous masses are indentical with those existing in the earth. When, therefore, the boundless extent of the law of gravity is considered, and the identity of the light and other elements existing in the remotest regions of observed space is seen, we know that our Creator divides power with none, but reigns alone throughout the entire visible creation.

What is the fourth quality or attribute that science discovers in the creative power? When man considers his own person, he is struck with the fitness of his organs to serve his purposes, and administer to his wants. Were his eyes located in the soles of his feet, their value would be greatly diminished; if his teeth were set in a row across his forehead, they would be useless; if his beard grew on the inside of his throat instead of the outside, he would be suffocated early in life. When he looks abroad over the earth and sees the provision made for his comfortable existence, as well as that of the rest of the animal creation, or is struck by the beauty of the landscape before him, the

emerald hues of which are variegated by myriads of vernal flowers, or beholds the crimson and gold of its gorgeous sunsets, he cannot fail to recognize the fact that benevolence has been manifested by the creative power. All nations, whether civilized or barbarous, recognize the goodness of their divinities, and from time to time give thanks to them.

In the fifth place I call your attention to another quality, or purpose manifested in the condition of the material world. Though the system around us is in many respects excellent, yet it is not one of optimism. We readily see that it might have been so arranged as to have been far better suited to our wants. The human eye is inferior to the owl's in the darkness, and to that of the eagle in the sunlight. A grain of sand or the point of a thorn may destroy it, and its powers begin to fail, while man is in other respects in full vigor. His teeth are liable to be broken or worn away. He asks why did not an omnipotent and All-wise Creator make my teeth at least as hard as the diamond, and as tough as gum elastic, so that they would neither have been broken nor worn away? Why does my body fail while my mind is vigorous?

The answer to these questions is not difficult.

When I am told that a most skilful architect has erected an edifice, and on examining it I find it built of plates of ice, I decide at once, that it was intended to be a mere play-thing, to endure only until the summer's sun dissolved it. Had he intended it to be a permanent edifice, as he is a most skilful worker in granite, he would have used that material, having an abundance of the substance on hand.

So when a philosophic mind considers the physical nature of man, and the elements around him, all regarded as the work of an All-wise and Omnipotent Creator, it decides that man was placed on this earth for a temporary purpose.

A sixth great consideration forces itself on the mind. To enjoy even a temporary existence, effort is necessary on his part. He sees that the lillies do not toil, nor the oyster labor for its subsistence, and he asks why does not the earth spontaneously bear food for me as abundantly as it does the leaves on the trees? Why do not streams of milk and honey and wine flow like water? Why are the seasons often so uncomfortable, and why are not raiment and houses provided? It is a most palpable conclusion that man was placed on the earth to be a laborer!

In the seventh place man is distinguished by his moral emotions. He possesses a sense of right and wrong, what we term conscience, one of the deepest feelings of his nature.

So important is this element in the nature of man that we will pause to consider it a moment. A young man, exhausted by a long walk, is seen returning home with a gun on his shoulder. His mother perceiving his wearied appearance, hastens to meet him at the door with a refreshing draught, exclaiming: "My son, you look so tired; I have here for you to drink what you like best." He replies by presenting his gun and discharging it into her breast, and as she falls, looks on to see how long it will be before she dies.

Will this strike the human mind as wrong? Or will the casuist suggest that the perception of wrong rises from the consideration that the mother will no longer be able to confer benefits, and that the son will thus be a loser? Then we will reverse the picture.

On arriving at the banks of a stream I observe a mother preparing the clothes of the family. Something arrests my attention, and I exclaim to her: "Madam, your little daughter has fallen into the water, but fortunately she has caught hold of an overhanging limb and is sustaining her face above the water. You can hear her cries, 'Mother! mother! oh, mother!'" The lady looks in the direction I point, and sees her daughter's little hands clinging to the limb she has grasped and still keeping her head above the water. Will the mother say, "This child gives me a great deal of trouble; she annoys me night and day; and she puts me to expense, too, for though her feet are very little, yet her shoes and stockings cost something. Even if I were to hire some one to take care of her, I should have to pay more than fifty dollars a year. Upon the whole I shall be fortunate to-day if I get rid of her." If, instead of speaking thus, she should, with a piercing appeal for help, rush into the water at the peril of her own life to save her child, would the feeling that she ought to do this be as decided in her mind as her belief in the axioms of the mathematician? Will it be denied that such emotions are an essential element in man's nature?

But as I move onward in my journey, I find a little boy of half a dozen years of age, with a sister still younger. He says to me, "Sir, I have been trying for a long while by throwing, to get some of those apples, but I cannot; will you please sir, as you can so easily from your horse, get one for me and one for my little sister?" I look at him and see a coin fastened around his neck by a string. Will I say to him, "If you will give me that piece of money, which does you no good, I will hand you down the apples?" Or better still, seeing that there is no one in sight, and remembering that I am not to return by that road, I dismount, tear the coin from his neck by force and ride onward. will not such an act necessarily strike the human mind as a criminal one? But it may be said that there are men in the world who could commit such a crime. So there are men born blind, and others who by accident or disease have become so; but does any one deny that vision or the faculty of sight is one of the elements of human nature? It is not more impossible for the human eye to fail to perceive that snow and charcoal are of different colors, than it is that man should not distinguish moral right from wrong.

Man may destroy his external organs, he may even obliterate some of his mental faculties, but a life of vice and crime does not eradicate his conscience. With the grasp of an iron hand, it wrings the heart and shakes the soul of the dying criminal.

The emotions which conscience excites are peculiar and readily distinguishable from all other sensations. While these impulses and feelings rather seem to draw him along, or impel him to act, conscience appears to command, and sits in judgment over all the faculties. It acts on the savage with a force as imperative as it does on the civilized man. A number of the barbarous tribe of Santal in India,

taken prisoners during an insurrection, were allowed to go free, merely on their parole, to a distant spot, to work for wages. After a time they were obliged to leave on account of the cholera, but every one of these two hundred savages walked back to prison with his earnings, rather than break his word. A thousand similar instances might be appealed to.

The violation of conscience gives rise to sensations unlike any of our other feelings. If a banker has sustained a serious loss in a speculation he is grieved, but should he fraudulently transfer this loss to another, with whose funds he had been intrusted, the pain of mind subsequently felt, is wholly unlike that of ordinary grief. Even when a little child secretly violates its mother's command, though it knows discovery impossible, and therefore dreads no punishment, still remorse is felt. The sorrow of an innocent man who mourns the death of a friend, is as unlike as possible the emotion of the criminal who has secretly murdered one. Conscientious feelings are directly connected with the sense, or faculty of spirituality. There is ever an impression, it may be mysterious and vague, that a spiritual power will punish wrong. Nothing so utterly unmans one as the sense of crime. In the language of the great poet, conscience makes cowards of all men. No material barriers seem sufficient by their protecting influence to make the criminal feel secure. In spite of walls of stone, and bars of iron, awake, he trembles to be alone, asleep, shadows strike terror to his soul. Eclipses fill the minds of barbarians with awe, not that evil has ever been directly experienced from them, but because they are regarded as menaces of a spiritual power.

On the other hand, nothing animates man with such fortitude as the conviction that he is in the right, and the belief that divine power will fight on his side. That people, whose courage acquired for them the appellation of "the men of iron," appeared to the Greek, Polybius, the most superstitious of mankind. And yet he attributed their greatness to the fact that they consulted their gods on all occasions, however trivial. He declared that the word of a Roman was worth more than the bond of ten Greeks with twenty witnesses.

The sense of accountability to a spiritual being seems to be a part of human nature itself, and is usually connected with the belief that this accountability extends beyond the present life. The civilized men of our day, the enlightened heathens of antiquity, and all the barbarous nations alike manifest the conviction, that there is a future state of existence, in which rewards and punishments are to be meted out. Among many savage tribes the custom prevails of burying with their dead articles of the greatest value, to be used in a future state. Sometimes when a chief dies, they slay a number of his attendants, that he may in the next life be waited on by those most familiar with his wants.

The old African slaves, imported into this country, had an absolute faith that when they died they would return to their native homes in Africa.

The Europeans, who first explored this continent, found the American Indians possessed of a strong conviction of their immortality, and

of the existence of a spirit land, in which the good were to be rewarded and the bad punished.

While the famished Esquimaux has pictured before him a heaven with various platforms, distinguished by the superior quality of the viands in the higher stages, the inhabitant of the temperate regions sees in the future boundless hunting grounds, filled with game, and the resident of the tropics anticipates sensual delights. This very diversity proves that such a belief is not the effect of any cunningly devised fable, handed down through successive generations, but that it is the result of a deeply seated faculty of the heart, which acts directly on the intellect, and like the other strong passions, produces in the mind images calculated to satisfy its longings.

If then it be an essential principle of man's nature, the conviction that he is accountable for his actions to some spiritual power, both here and in a future existence, that power being the omnipotent unity indicated, must be the supreme moral Judge of the universe.

It has been argued that science does not furnish evidence of a personal God. When the action of the force of gravity is observed it strikes the mind as being an inanimate or dead force. Plants exhibit a certain vitality. In animals of the higher order, we observe feeling, perception or intelligence, the capacity to judge, and will to direct and modify their action in accordance with their desires, fears or passions. In addition to these man exhibits high sentiments, moral emotions, sense of duty or obligation, directed by conscience, spirituality, devotion, or reverence for a Deity, and a conviction of accountability to Him throughout an immortal existence, which give force and direction to his diversified intellectual perceptions. To assume that the Creator could give to man all these faculties without being able to possess them himself, involves an absurdity as great as the human mind can conceive. Man cannot imagine the existence of these intellectual and moral qualities without connecting them with personal existence. The conviction is so overwhelmingly strong that no argument or evidence can add to its force. Nor have men existed in any community without regarding their divinities as beings invested with personal existence.

Greater and more imposing than all else is the idea of endless duration, impressed on the mind by the contemplation of the material universe. All the objects around us seem perishable, but in fact they are only subject to change and never to annihilation. Geological science shows us a succession of changes in the earth, requiring for their consummation a period of time so great that the mind is bewildered when it attempts to look back through the long vista of past ages, in a vain search for the beginning of things, and encounters ideas so vague and shadowy that reason seems to stagger in their presence.

Again, when science shows us that the earth has not grown sensibly colder in two thousand years, we ask, how long a period will elapse before it loses its vital heat and becomes, what the smaller moon appears, a dead planet? Or may it not be true that its mass is such, compared with its surface, that now its radiation retarded by its at-

mosphere, is just equal to the amount of heat that it annually receives from the sun?

The mind is carried forward still in this line of thought, when it looks upward to the celestial bodies, and considers their structure and movements. A day doubtless seems a long period to the animalculæ, which exists only for a few hours. A year is long to a child, while to the mind of man the twenty-five thousand years, in which the equinoxes, in their precession make one revolution, seems an immense period. But why, science asks, should not these revolutions be continued until their numbers are equal to all the past revolutions of our earth about the sun? The sun itself is moving with all its planets through space, possibly around some remote centre. In what immense period will it make one of its circuits, and is it thus to move on until its cycles shall have been as numerous as up to the present time have been all the earth's diurnal revolutions upon its own axis?

Some of the distant nebulæ are regarded by astronomers as masses of cosmical vapor, or star dust, out of which new suns are to be formed. How long will it be before these suns are completed with their attendant planets, and what period must elapse before those planets, at first incandescent masses, are sufficiently cooled to become, like our earth, habitable worlds? And are these new suns, with those already created, to move on in their great cycles forever and forever? Philosophic science indicates no termination to the material universe. And if it is to exist forever, why should not its great Creator be eternal? Is He less than the work of His hands? Have we any reason to suppose that His power to-day is not as great as it was in the dawn of creation? Vast and incomprehensible as is the idea of eternity, science can point us to no other conclusion.

Are not then these eight attributes and principles fairly and necessarily deduced from a thoroughly scientific examination of the material world? Can sound philosophy hesitate to accept them as true? How then do the doctrines of Christianity harmonize with these deductions? From the announcement in the beginning of Genesis, that "God said let there be light and there was light," to the closing passages of Revelation, the Bible everywhere portrays in the most striking and splendid language, the omnipotent power and infinite wisdom of the Creator. In comparison, how puerile are the gods of Homer, magnified as they were by the greatest imagination of all antiquity? Two or three chapters in the book of Job convey to the mind higher ideas of omnipotent power and infinite wisdom, than all ever uttered by profane writers. Nor is the unity of the Creator less strikingly manifested throughout the Bible. He ever there stands alone, tolerating no rival. His benevolence, or merciful goodness, is proclaimed on every page. So too is man's fleeting existence declared, and he is likened to the grass that is green to-day, to be consumed to-morrow, to the shadow that passes over the earth, and leaves no trace of its existence.

In the sixth place, we are told that man was especially created to till the ground, and after his transgression he was condemned to live by the sweat of his brow. This beautiful analogy presents itself too. As the good things of this world are not thrust upon man, but he is com-

pelled to labor in order that he may possess and enjoy them, so, will not spiritual good be forced upon him. He is told that he must strive to enter in at the straight gate; that the violent take the Kingdom of Heaven by force; that he must fight against the great adversary, the Prince of this world; and, as men contend for the fading laurels of earth, so must he struggle to win a crown undimmed by time or even eternity itself.

But if there be one feature of the Bible which may be considered as paramount to all others, it is the manner in which the moral law is proclaimed. God's perfect justice, His absolute holiness, and man's accountability for his conduct to Him through time and eternity, are set forth in a manner so pre-eminently striking as to indicate this as the chief purpose of biblical revelation.

A most remarkable feature of the Bible is the truthfulness of its presentation of human nature. Man in his books ever flatters himself, but strip him of the paraphernalia with which his pride and vanity invest him, as in times of great trial in sieges and shipwrecks, when his inmost nature is made manifest, and the multitude stand out before us in the character in which the Old Testament depicts humanity. So unlike, too, to all previously written are the gospels, that they extorted from Napoleon on the island of St. Helena, the exclamation that their divinity was so palpable that it overwhelmed him.

To the awe and terror of previous systems the New Testament adds the great elements of benevolence, love, humanity, charity. It announces a Holy Spirit, the Lord and Giver of life, which communes directly with the human heart. Though for the first time proclaimed, it is in harmony with the deep mysterious feeling of man's nature, as shadowed forth possibly in such declarations as that of Socrates, the noblest of heathen philosophers, who declared that a good spirit directed him through life. Though this Spirit will not always strive with man, yet it returns to him with renewed appeals.

But the Positive Philosopher asks if it is not unjust that men should be punished eternally for such offenses as they commit in this life. His philosophy answers this question. Let him look to the material world around him, the physical and organic laws of which he prides himself on knowing. His arm is crushed off and his eyes are put out. Will these injuries be permanent? In his anguish he asks, am I thus forever to be punished for one thoughtless act,the work of but a single moment? "Yes, yes, your arm is gone forever; never, never more will your eyes behold the beautiful light." If then the moral law should, in like manner, inflict eternal punishment for crimes against it, is it not in exact harmony with the physical law, the uniformity which the philosopher boasts that he has discovered? If, however, it could be said to him, "Here is a remedy, which will give you back your right hand, and restore your sight," with what a bound would he not spring forward to secure that remedy! No human skill, no law of nature will ever restore to him these members. But the Christian system, higher than the earthly law, holds out this remedy, through its plan of atonement, and by contrast with former suffering, man's enjoyment will be increased a thousand fold.

It does seem to me that if all the men of science, in grand convention assembled, were to proclaim the great principles fairly established by the contemplation of the material universe, they could not do it more accurately and strikingly than they are presented by Christianity.

Persons sometimes ask why is it, if the Bible be the Word of God, that certain things are left unexplained and obscure. For every mystery in the Bible an hundred can be found in nature. Science cannot explain electricity or magnetism, or light or heat, or attraction and repulsion, or vegetable, or animal life. Man is, perhaps, the greatest mystery of all to himself, for he cannot understand how he perceives, or feels, or thinks. And yet he will trust his science with its countless mysteries, while he proposes to doubt the Bible with its few.

The positive philosopher assumes to decide not only what the Creator has done, but he affirms, with absolute confidence, that he will not act further. His view might be expressed in the proposition that the Creator, after completing the universe, died. At least, he asserts, that He never will, by direct act, interfere again with His creation, and that He could not, by performing a miracle, so do, without deranging the whole system of the universe. Man, a creature so feeble that he is often obliged to lean on a crutch for support, or is compelled to swallow a drug, to relieve him from pain, and enable him to think; and who, in his best condition, is exhausted by a single day's labor; he, with the mechanism of the universe expanded before him, in all its endless action, seeing that the moon does not rest by day or night, that myriads of stars ever dance with exhaustless light, that the sun tires not in his course as he marches unchecked and unceasingly across the whole space of the heavens; he would assume to limit omnipotence, and set bounds to infinity!

So utterly, however, have all the efforts of such philosophers failed to shake the faith of the human mind in the continued superintendence of the Deity over all created things; so absolute is the confidence of men in the ever present guardianship of His hand, that if the sun were but once seen to stagger in his course, all humanity would be prostrated in terror.

There is, however, yet another remarkable analogy between the study of nature and that of the Bible. When man investigates the properties of material things, he easily acquires all the knowledge that it is most useful to him to possess, with much that is merely interesting and curious. But when he attempts to dive into the causes of things, he is powerless. In like manner when he looks to the Bible to learn his duties, they are as manifest to him as is the noonday sun in the heavens. But when he seeks to "find out the Almighty to perfection," all his powers fail him, and he hears the declaration, "Hitherto shall thou come, but no further, and here shall thy proud heart be stayed."

RELIGIOUS AND POPULAR ORATORS.

AN ADDRESS

DELIVERED AT THE COMMENCEMENT OF THE UNIVERSITY OF THE SOUTH, AUGUST 5, 1875, AT SEWANEE, TENN.

By Hon. T. L. CLINGMAN.

In no country in the world does public speaking perform so important a part as in the United States. It is not only true that our political contests, on the result of which depend the action of the government, are in a great degree influenced by public discussions, but almost all kinds of instruction and information are diffused in this mode. Especially is this true with regard to religious subjects. A majority, probably, of our people are dependent on oral addresses mainly for the knowledge they acquire with regard to religion.

Hence it is of the utmost consequence that the style of public speaking should approach as near perfection as possible. While we have many fine pulpit as well as popular orators, yet a majority of speakers, perhaps, fall below the standard which they ought to attain. Great pains are taken to teach men what they should say, but in what manner they ought to speak, to enable them to make the most decided impression on their hearers, is seldom thought of. In this respect, many of our public speakers are strikingly deficient.

When, however, as on this occasion, I propose to consider the defects of certain pulpit orators, and the characteristics of popular speakers, it may be objected that unless one were free from fault himself, he should not venture to criticise others. A man, however, may be able to judge whether a suit of clothes fits him, though he has never constructed a garment, and persons who cannot sing are often capable of appreciating music. The stone mason and the carpenter observe the effect of their blows on the material on which they are operating, and in like manner public speakers may be benefitted by knowing what impressions they make on their auditors. Hence, though I may be ever so faulty as a speaker, yet the points of objection made may be worthy of consideration.

Again, Burke says our antagonist is our helper. An enemy, if we have one, will be likely to find our weak points, and during my political life I was ever more anxious to read attacks made on me than commendations. As some of my criticisms will perhaps apply as frequently to ministers of the Episcopal Church as others, it may be proper that I should state that I am a member of that church, and naturally should feel a greater interest in its excellence than in that of any of the other religious denominations.

The deficiencies to which I am now about to call your attention occur more frequently in written sermons than in such as are delivered *ex tempore*. The most striking defect is the want of earnestness in manner and delivery. Many years since, at a Methodist quarterly meeting, I was struck by the force with which this point was presented by one of the preachers. While complaining of the want of earnestness among his brethren, he exclaimed: "Any one of these lawyers," pointing to several present, "will, for ten dollars, exhibit before the jury, ten times as much zeal for his client as you do in your great calling!" No one who compares the earnestness with which juries are addressed, with the delivery of many sermons, can fail to be impressed with such a remark. The animation of political speakers is not less striking. Especially is this to be noted in the cases where the candidates for office debate together, and thus struggle for each vote. If a candidate in the Southern, and many of the Western States, were to speak with no more earnestness and effect than do many clergymen, the crowd would abandon the stand in fifteen minutes, and he would be distanced in the race. I have observed, that in several instances, lawyers who became preachers, were very successful pulpit orators. The late Dr. Hawks was a shining example. This is perhaps chiefly due to the fact that they had at the bar acquired an earnest manner of speaking.

As the clergyman has the greatest of all subjects to present, and the most momentous issue to discuss, how can this defect be remedied? In *ex tempore* speaking, the difficulty is more easily overcome, for one who expresses his thoughts as they come up, naturally speaks with some animation. But in the delivery of written sermons can the evil be corrected?

We know that Demosthenes electrified the Athenians with speeches that had been written and committed to memory. Thousands of other speakers have, in like manner, been successful. Whitfield was one of the most wonderful orators that ever lived. Some of the play-actors who used to listen to him in the streets of London, with a view of improving their own elocution, said that he was never heard to the greatest advantage, except in one of those sermons that he had delivered an hundred times. When Joseph R. Chandler, then a member of Congress from Philadelphia, began to read a speech in the House of Representatives, many of the members started to get out of the hall. The practice, now so common in both Houses, of members reading their speeches, even from printed slips, was unknown, and I doubt if six speeches were read during any one Congress of my service, running through more than a dozen years. But Mr. Chandler read his

speech with so much force, earnestness and unction, that he soon commanded the attention of the House, and ever afterwards members, instead of fleeing away when he began to read, collected around him.

The play-actors, however, furnish us with the best evidence of what may be accomplished in this line. Not only do such men as Forrest and Booth, for the thousandth time, utter the same sentences with the greatest force and earnestness, but the common stock-actors deliver their parts with such animation as to interest their auditors. No man could earn a living either on the stage or at the bar, who should speak in the listless or drowsy manner which we often witness in the pulpit.

What, then, is the first step to be taken to correct this evil? The fact must be realized that men should speak to be heard. It is to no useful purpose that a man shall, in a low, inanimate tone, repeat to himself, or to a few persons, who may chance to sit near him, some things so well known that they cease to interest him. The most important sentence of every sermon is unquestionably the text on which it is founded. And yet how often is it delivered in a tone so low that the major part of the congregation do not hear it. It is true that after the speaker has proceeded for some minutes, his voice from the effect of exercise rises, probably without his being conscious of it, so that most of the congregation can hear him. Every speaker in the pulpit ought to announce his text, so that it may be heard by the whole congregation. To insure this, he should fix his eyes for the moment, at least, on those who sit most distant from him. When we speak to any one, we instinctively give to the voice that pitch which is necessary to reach the person addressed. If we do not recognize this fact, we shall either strain the voice unnecessarily by over-exertion, or fail to be properly heard.

One of our North Carolina Judges left the bench, and became a candidate for office before the people. He had been accustomed to charge juries, who sat near him, in a low tone. In his public speeches he would often turn his attention to persons quite close to him, and thus, though he spoke with sufficient animation, his voice failed to reach the greater part of his audience. On my suggesting to him that he ought rather to look to the rear of the assembly, he readily corrected the defect. To fix one's attention on the most distant auditors, requires an unnecessary strain of the voice, and it is sufficient to speak to those who are two-thirds of the distance to the outer limits. It is well, too, that the eye of the speaker should occasionally go to every part of the audience, as this influences the pitch of the voice, and every auditor perceives, both from the tone and eye of the speaker, that he is directly addressed. By thus throwing the voice into the different parts of the assembly, it is easy to see the effect produced on individuals, and this reacts on the speaker, and stimulates him to an extent that greatly increases the effect of the address.

Some speakers are so irregular in their enunciation, that a part of their sentences only, is heard. Nothing is more unsatisfactory to the hearer, than to lose sometimes the most important words of the sentences. It is easy to give due modulation to the tones of the voice, without rendering it indistinct. All the great orators I have heard,

were able to vary their tones without ceasing to be audible at any time. When one speaks naturally to the persons before him, this will usually be done unconsciously.

Clergymen, as a class, suffer from disease of the throat. This has been attributed to their much speaking. But lawyers on the circuits where I have practiced, frequently do more speaking per week than most clergymen do. They usually too, speak with much more vehemence and loudness of tone, and yet they do not suffer from that cause. The difference is, I think, due to the monotony with which the clergy speak. They strain their voices by using them in a dull, uniform tone. This consideration was brought to my mind by a fact which I will mention. For more than twenty years, I had been accuscustomed to *ex tempore* speaking, often in the open air, some times for three hours without cessation, and with sufficient loudness to be heard fifty or sixty yards around. This was done without any sense of fatigue to the voice. Having been invited to deliver an address, before an agricultural association, I thought it would be necessary to write it, as is usually done. When, after it was written, I attempted to read it aloud, before I got half way through, my throat, to my great surprise, began to feel pain. When the time came, however, for delivery, abandoning the attempt to follow the language as written, I spoke it to the assembly without fatigue. If one will read with animation, entering into the spirit of what he is uttering, he will easily modulate his voice naturally, and thus rest it, as the muscles of the body are relieved by changing their action, when they have been strained by continued exertion of one kind.

Many speakers, too, injure their voices, and soon break down by speaking in the throat, instead of the palate or roof of the mouth. Stephen A. Douglas, when I first knew him in Congress, used, in his vehement style of speaking, to tear his throat very much, often becoming quite hoarse. He afterwards improved his method, and spoke in a clear, ringing voice, with great ease. This evil practice can easily be cured if persons will speak only as they exhale. By throwing the voice against the roof of the mouth, and closing the teeth sufficiently, it is easy to produce both loudness and distinctness. John Bell, of Tennessee, though an able and vehement speaker at times, was very faulty in this respect. When in July, 1850, he was speaking in the Senate, and panting with excitement and the heat of the season, a word uttered as he inhaled was scarcely audible, while the next, given during a violent exhalation, went with a force almost sufficient in seeming, to cleave the roof of the edifice. Of eminent men, Mr. Wm. H. Seward probably had the worst delivery of any one I ever heard. In the ordinary parts of his speeches he talked moderately well, but when he assumed to be eloquent, he adopted a sort of sing-song, monotonous, hollow tone, like a low howl, decaying and dying away at the end o the sentences, as unnatural as possible. This faulty style I have more frequently observed in certain Presbyterian preachers than perhaps in any other class of speakers.

Any one may easily, by a few week's practice, learn to speak entirely as he exhales, and then by separating his words, so as not to let them

run into each other, and properly marking the distinctive sounds of each word, his meaning will be apprehended as far as his voice can be heard. Nor will this at all affect the rapidity of speech. On the contrary, Mr. Curran, who formerly managed the reporting of the debates for the House of Representatives, told me that a gentleman who spoke in this mode so as to be heard distinctly throughout the hall, could fill more columns of the *Globe* in an hour's speech than any member then in the House.

By giving attention to these points, by endeavoring to enter into the meaning and spirit of that which he is uttering, and by fixing his attention on his auditors, and attempting to make an impression on them, every one may not only cause himself to be well heard, but will also be able to interest his audience.

Let us now consider the peculiarities and characteristics of some of the most distinguished orators of the country. I will, in the first place, call your attention to two prominent Senators of the same State, Daniel Webster and Rufus Choate, of Massachusetts. Among orators deservedly eminent, I can recall no more striking contrast than they presented. When I first heard Mr. Webster, his voice, though not in any sense melodious, was strong, fine and very masculine. At times it reminded me somewhat, and pleasantly, of the ringing tone of a raven's note at a great distance through the air. During his latter years it lost much of its strength and volume, but was always distinct and pleasant. In 1848 he made an elaborate speech on the subject of the proposed acquisition of territory from Mexico. He differed with his colleague, Mr. Davis, had much feeling on the subject, and only spoke after thorough preparation. That speech may be remembered as the one in which he said, "Politicians are not sunflowers, they do not turn on their god when he sets, the same look that they turned when he rose." A lady at Washington mentioned to me, that fully two weeks before this speech was delivered, he sent to her a note requesting the loan of a copy of Moore's Melodies, and that she would mark the passage where these verses appeared. This circumstance indicates the care with which the speech was prepared. On this occasion he spoke with unusual earnestness, and was very impressive. There were several of the new members of the House in, listening to Mr. Webster for the first time. Towards the close of his speech a member from one of the Northwestern States said to me, "What is the matter with the old fellow; what makes him so dull?" "Why," I observed, "he is to-day speaking with more animation than I ever heard him." "My God!" he exclaimed, "if he were to speak to one of our Western crowds in that manner, and they did not know who he was, they would go off and leave him."

It was then the custom for certain Western speakers in the House to declaim with great vehemence of manner, clenching their fists and marching forward and backward with a formidable aspect, and when they reached the most eloquent part of the speech, the cravat was pulled off with a sudden jerk, the vest unbuttoned and thrown open, partly to diminish heat and perspiration, and doubtless also to impress the audience with the greatness of the effort being made. To persons

accustomed to such eloquence, it seemed very strange that Mr. Webster should sometimes speak for several minutes without making a gesture. In spite, however, of his usual want of action, he kept the attention of his auditors, and his speeches had that most remarkable quality, that when one looked back to them, from week to week, they seemed to stand out more prominently, and loomed in the distance.

Mr. Choate presented a most remarkable contrast to Mr. Webster. When I first entered Congress I was told this story: Mr. Choate, as a member of the House, arose to make his first speech. Ben Hardin, of Kentucky, got up from his seat, saying that he had heard enough of the declamation of maiden orators, and that he would go out of the way until Choate had finished. As he opened the door to pass out of the hall, the singular intonation of the speaker arrested his attention, and he paused to listen to one sentence. But he held the door open till a second sentence was finished, and continued standing thus for some minutes, and then returned to his seat and heard the speech through. So peculiar were Mr. Choate's intonations, and so nervously animated were his looks and gestures that he could, even in a law argument, rivet the attention of every person present.

Early in 1844, in the Senate, he spoke on the Oregon question. Several Democratic Senators, following in the debate, assailed his speech with remarkable vehemence. It was evident that they intended to make party capital by attacking Great Britain. Conspicuous among them were Messrs. Benton, Silas Wright and Buchanan. Though, however, denouncing the pretensions, the arrogance and the insolence of Great Britain, they disclaimed any purpose to go to war with her. While these speeches were being made, one evening at a social party, on meeting Mr. Choate, I said, "Why has not your speech on the Oregon question been published?" He replied, "I have not yet made a speech on the Oregon question, but I mean to make one." Soon after he delivered probably the finest effort of his Senatorial career. After discussing, for perhaps a couple of hours, the merits of the question with an earnestness, a beauty and an eloquence seldom equaled, he turned his attention to the Senators who had assailed him. Quoting in succession the words of each one denouncing the oppressions, the insolence and the arrogance of Great Britain, "but the Senator wishes for no war with her," with consummate skill he repeated Marc Anthony's oration over Cæsar's body, drawing a parallel between each Senator and one of the conspirators. "Great Britain had always been our enemy, she was arrogant, domineering, and insolent, but the Senator wishes for no war with her." "Here the well beloved Brutus stabbed, but Brutus is an honorable man." Another Senator quoted, and then the exclamation, "See what a rent the envious Casca made, but he, too, is an honorable man." So admirably had Mr. Choate prepared the minds of the auditors, that it is difficult to give an idea of the effect of these quotations. As one looked over the Senate, it seemed ready to burst into laughter; but, in fact, every one restrained his feelings, lest he might lose some of the speaker's words.

The effect on the Senators arraigned was not less striking. While Mr. Benton strove to throw it off, with an awkwardly put-on air

between indifference and defiance, Mr. Buchanan hung his head with the sheepish look of one who had been detected in a shallow stratagem. After getting through with his adversaries, Mr. Choate drew himself up to his full height, with an air of great dignity, and said, "But, Mr. President, there is one great and striking difference between Anthony and these honorable Senators, and it is due to their high character, as well as to the courtesy of the Senate, that I shall state it." As he uttered these words in a fine, manly tone of voice, and with an air of generous courtesy, the Senators raised themselves up in their seats with a countenance and manner which seemed to say, "Well, he has hit us rather hard, but he is about to make amends handsomely." Mr. Choate said, with striking emphasis, "Anthony was a villain; Anthony was a hypocrite; these honorable Senators are perfectly sincere." Had he swept the chamber with the keen cymeter of Saladin, it would seem that heads could not have sunk more suddenly.

When the speech was concluded Senator Foster, of Tennesse, and George W. Summers, of Virginia, both fine speakers and orators, with whom I happened to be standing, began to express their admiration most warmly. "If that man," said one of them, "only had the manner of Clay or Webster or Calhoun, he would universally be regarded as the greatest orator in the world." "I differ with you," I said, "it is his fine manner that in a great degree makes him so impressive, but his ideas are not in themselves as large as theirs, and are not calculated to make so great an impression." They, however, reiterated their opinions with much emphasis. Some weeks later, on speaking to them again, I found that the effect had been greatly diminished.

Why did the impression of Choate's speeches fade with the lapse of time, while Webster's thoughts retained their place in the mind, or even seemed to grow larger? When our feelings are strongly excited a mental perception will make an impression, that will be diminished as the feeling subsides. How different is the effect made on the mind by the songs of Burns or Moore when well sung, from that produced by merely reading the words. Choate's speeches were characterized by fine thoughts, great earnestness and animation, and such a combination of feelings as might be the result of the action of poetry, music, and eloquence all joined together. But after these emotions passed away, the impression faded as does that of Highland Mary or the Last Rose of Summer without the thrilling accompaniment of the song. Though Patrick Henry, by his impassioned eloquence, completely carried his audience along with its torrent, yet Mr. Jefferson said that after he had finished, one could not remember what he had said. On the other hand Mr. Webster's speeches were heard with little elation of feeling, the thoughts were great and striking in themselves, and being clearly presented to the intellect, in its calm moments, they held their place in the mind, and as other things faded from the memory, they seemed rather to swell in their proportions.

I regard Mr. Webster's greatest effort, as that delivered on the 7th of March, 1850. No mere report of it will give one an idea of its greatness, without such a knowledge of the circumstances under which it was made, as perhaps, none but those, then present, could realize.

Intense anxiety prevailed in Washington in the minds of men of all shades of opinion. The shadows of those events, which occurred a dozen years later, seemed to oppress the minds of all present. With this anxiety, there was a hope that Mr. Webster might solve the difficulty.

He spoke to such an audience as never had previously been assembled in the Senate Chamber. All felt the truthfulness of Senator Walker's words, when in moving to postpone the subject on which he had the floor, to take up that on which Mr. Webster was to speak, he said there was "But one man in America who could have drawn that audience together, and he alone could satisfy it." It was not merely that all the sitting and standing room in the Chamber was filled with a brilliant throng of ladies and gentlemen, but the distinguished character of the persons assembled was most remarkable. Being fortunate enough to get a seat on the arm of Mr. Corwin's chair, who kindly lent forward to give me room, and thus being quite near the position of Mr. Webster, I had a fair view of every countenence, turned as they were to the orator. There appeared in every look, anxiety and intense earnestness. When he arose,

> "his look
> Drew audience and attention still as night,
> Or Summer's noontide air."

He had been speaking for nearly an hour on the subject, in general terms, before he indicated the position he meant to take. Every look retained its intense anxiety of expression, until, at the close of one of his sentences, he said in an emphatic manner, "I will not vote for the Wilmot." There seemed at once a sense of relief in the audience, accompanied by a slight rustling sound caused by the relaxation. He proceeded, and fully met the public expectation and hope. It was a purely intellectual impression made on the minds of all present, and yet the effect was greater than any mere oratory alone could have produced. I never witnessed such a sense of relief in the public mind. He had drawn from the dark cloud, the lightning which seemed ready to burst on the country. But for this effort, we should probably have had, with what result cannot now be known—the collision which occurred a dozen years later.

Of those resembling Mr. Webster in the largeness and power of their thoughts, I can recall no one so remarkable as George McDuffie. I once asked Colonel Wm. C. Preston, of South Carolina, whom he regarded as the greatest orator he had ever heard. He instantly replied, "McDuffie." Of Colonel Preston himself, it is but just that I should say, that after hearing him under favorable circumstances, I have never doubted that he was by far the greatest orator that I ever listened to. His thrilling voice, his whole action, suited to his impassioned eloquence, his bright and noble sentiments, his wonderful and imposing attitudes, placed him far in advance of any orator that I ever knew. When for the first time in Rome my eyes fell on that colossal statute of Pompey, the base of which was bathed with the blood of the great Dictator as he expired under the thrusts of Senatorial daggers, I was instantly

reminded of some of Preston's attitudes. As often as I afterwards looked on it, the same impression would strangely come over me. After the torrent of Preston's impassioned eloquence was fairly under way, he had a complete control over his auditors. When, for example, warmed with the vehemence of his action as graceful as it was impetuous, he would sometimes, as it were, unconsciously take off his wig with his left hand, and place it beside him, so as to expose his head entirely bald, there was to be seen in the audience no more tendency to smile, than when Chatham, for the third time, pronounced the word "sugar!"

McDuffie, with the largeness of thought which characterized Webster's speeches, possessed the earnestness of Choate, and a vehemence and force immeasurably superior. The array of his arguments was most powerful, and his denunciation of wrong absolutely terrific. He had not the poetry of Choate, and lacked the polish of Webster, but his massive thoughts, thrown out with tremendous energy, seemed to fall among his auditors like thunder bolts. His whole manner was that of a man calling into action every faculty he possessed, not to save his own life, for a brave man could not plead earnestly for himself alone, but as one who was making a dying struggle for the life of his country, or for truth itself. It would be interesting for one to compare Mr. Webster's speech delivered in the House of Representatives in 1824 against the tariff, with one of McDuffie's on the same subject, made in 1832.

McDuffie's speech against the removal of the deposits, delivered in 1834, bears marks of a higher degree of finish and greater polish in its language, than most of his efforts show. It is, however, less forcible and vehement than some others.

His great idol, Mr. Calhoun, was wholly unlike him in manner as a public speaker. He had as much earnestness, and at times nearly as much vehemence, but they seemed to be the result of pure mental and nerve force. Like Mr. Webster, he would sometimes stand erect for many minutes without a gesture, but when it did come, unlike the slow and often languid movement of Mr. Webster, it seemed rather the result of an electric thrill through his frame. Instead of Mr. Webster's calm, deliberate, and seemingly studied words, Mr. Calhoun's thoughts appeared to flow so rapidly that he had not time for gesticulation. His great propositions followed each other so logically, and so swiftly, that his mind seemed to be carried forward with the directness and speed of a cannon ball in its flight. As great a metaphysician as Aristotle himself, his propositions were stated with a clearness, a logical sequence and a grandeur perhaps scarcely ever equaled.

Towards the close of his life he spoke more calmly, but always with great impressiveness. As he usually addressed not the presiding officer, but his fellow-senators, there was a frankness, a dignity and a nobleness in his bearing, that carried one's mind back to the scenes when Tully or Julius Cæsar stood before a Roman Senate.

Entirely different from any of these speakers was Henry Clay. When in the meridian of his power, his voice was perhaps unequaled. Both in the richness and melody of its fine tenor, and in the grandeur of its deep bass, it seemed capable of indefinite modulation and expan-

sion. Perhaps the nearest approach to it in excellence and compass, that I can call to mind, was that of Gentry, of Tennessee. But even his voice, remarkably musical, rich and varied in its tones, was scarcely equal to Mr. Clay's in compass; was not so emphatic; could not strike with as much force; nor was it capable of so great expansion in its deep organ tones. Though Mr. Clay was tall, and usually stood very erect, he never seemed stiff, as often Mr. Calhoun appeared. His jesture was abundant, easy, appropriate, very impressive, and yet always graceful as well as dignified. He never strove as some speakers do, to make an impression by the exhibition of bodily force. He was always animated, often impassioned. Whether he seemed to be addressing himself wholly and earnestly to the presiding officer, or threw the glances of his bright blue eyes over the audience, by his animated, varied, and earnest tones, and by his graceful and sometimes commanding gesticulation, he held the undivided attention of his hearers. He appeared like a champion in battle, delivering his blows right and left, and enlisted the feelings of his auditors on his side so completely, that they seemed to regard it as their own fight, and were ready to shout over each success won.

Mr. Clay was perhaps least felicitous when he attempted to utter merely handsome things, and make poetical quotations. He did not use well such prettinesses as Sargent S. Prentiss would cull from poets and novelists, and with them entertain an audience, without ever producing a deep impression on it. Mr. Clay appeared to the greatest advantage when repelling personal attacks, or when discussing topics directly connected with the honor, the safety, or the liberties of the country. His high sense of personal honor, his dauntless courage, and at times haughty daring, with his great public spirit and ardent patriotism, rendered him often imposingly grand.

It was not the possession of these powers alone, remarkable as they were, that made him the greatest parliamentary man in the world. He was a good fighter, and could take care of himself in every kind of debate. That he was at times as great an actor as Lord Chatham himself, will be evident to one who merely reads his eloquent and patriotic appeal to Mr. Van Buren in 1834, to use his influence with President Jackson, to induce him to restore the deposits, or, at a later period, his description of the interview between the Democratic Senators and John Tyler. Those men, whom he could not drive by force, he often won by his unrivaled tact and address. He, however, lost nothing in the estimation of the country by the occasional exercise of these powers, for his perfect frankness, high courage, and his public spirit, relieved him from all censure. Such means, when used at times to secure great and honorable objects, were viewed merely as we do the efforts of a skilful horseman, who to manage a fiery steed, is equally ready to use the spur, or to coax the animal. He probably concealed as few of his thoughts as any one I ever knew, and no man ever lived who was more prompt to repel all that was not alike honest, honorable and manly.

So great was his ascendancy over his admirers, and so boundless his popularity, that they were not in the least impaired by his want

of success. After his third, and what proved to be his last defeat, as a presidential candidate before the people in 1844, and after having been for some years in retirement, he came to Washington in the early part of the year 1848, to deliver an address before the Colonization Society. The hall of the House of Representatives was granted for the occasion, and the time fixed for eight o'clock in the evening. Wishing to secure a favorable position for hearing, I went up more than an hour before the time when he was to begin. On entering the capitol grounds, I was surprised to see gentlemen and ladies in large numbers standing in groups, or strolling through the grounds. I entered the rotunda, but found it packed with persons, the passages were so crowded that I could not reach the hall, and learned that it had been filled early in the afternoon by those anxious to secure seats. It was on that occasion that Mr. Crittenden, who after years of devotion to Mr. Clay, had decided to support General Taylor, said with some apparent vexation, that Mr. Clay could bring together larger crowds than any man in America, and then get the fewest votes out of them.

If Mr. Clay went to a social party, which he rarely did, the dancing was broken up by the pressure of young ladies to shake hands with him. Sometimes his presence in a church disturbed the exercises, by directing the attention of the congregation to him, instead of the preacher. While he thus, perhaps, had more personal friends than any man who ever lived, Mr. Calhoun drew to himself a smaller number, and held them with hooks of steel. Mr. Webster, notwithstanding his fine conversational powers, and great social qualities, did not fasten to himself so large a number of personal friends.

It was singular that the ascendancy of these three men should have been maintained so long in the public mind. Many possessing great ability and eloquence came up around them. John M. Clayton, Silas Wright, Corwin, Crittenden, Benton and many others there were, who would have been pre-eminently great since that time, but no one, in their day, rated them with either of the triumvers.

They were, too, all remarkable for their presence and bearing. They had, however, one cotemporary, not less eminent, who was in nowise the inferior of any one of them in form and carriage.

In the early part of the year 1835, John Quincy Adams, by the appointment of the two Houses of Congress, delivered in the hall of the House an oration on the character and services of LaFayette. That occasion was well calculated to make a deep impression on the memory of youth, fresh from his studies. The area immediately around the Speaker's desk was reserved for those not members of the House. These great Senators, with such associates as Preston, Mangum, Watkins Leigh, Poindexter and others known to fame, and Vice-President Van Buren, at their head, took the places assigned to them. The Justices of the Supreme Court, led by their dignified, most peculiar, antique-looking Chief, John Marshall, came in. They were followed by President Jackson and his Cabinet. As he appeared at a distance equal to half the breadth of the hall, there was no figure in all that vast assemblage so striking. Always imposing in manner and appearance, then in an admirably fitting suit of black, his tall

form, the wonderful perfection of his outline, his dignified carriage, his entire bearing in movement and mien, rendered him the most interesting and remarkable looking personage of all then present. I can scarcely suppose that Washington, himself, could have been seen to more advantage. During the three hours occupied by the address, delivered with surprising force and high rhetorical power, with many bursts of great eloquence, he was kept in closer proximity to Messrs. Clay and Calhoun than he had been for many years.

There was another scene occurring much later, very different from this, but not less impressive, in which two of these personages filled a most conspicuous place. In the winter of 1850 and 1851 Jenny Lind announced a concert in Washington. Being desirous of hearing her under favorable circumstances, I secured a seat near the front of the stage. The front seat was, however, reserved for certain distinguished persons whose presence was expected. Owing to the fact that several of them had been invited to a dinner party by one of the foreign ministers residing in Georgetown, their attendance was delayed, so that the room was entirely filled by a distinguished and highly cultivated audience.

The quiet was at length disturbed by a rustling and stamping of feet, and on turning towards the rear I saw that Mr. Crittenden, then Attorney General, had entered the main aisle. The applause indicated that some looked to him as the coming man for the Presidency. Blushing a little, and showing some embarrassment in manner at being thus made conspicuous, he advanced to a seat in front. After a pause of a few moments, a much more decided movement occurred, and on looking to the rear I saw the portly figure of President Fillmore advancing along the aisle. His fine form, dressed in good taste, and the easy manner in which he acknowledged the greeting extended to him, increased the applause, which seemed to say that he was not to be superseded by a member of his own Cabinet. Not many moments after he had been seated, a thundering demonstration began, surpassing emphatically either of the preceding ones. Mr. Webster had entered, just from the dinner, in regal garb, with kingly look, but that nature does not now bestow such looks on kings. His recent great efforts for his country had brought much censure on him at home, and the audience feeling this, seemed resolved to make fitting amends. He evidently felt great gratification at such a welcome, and moving forward with Mrs. Webster, a person as a lady not less distinguished in appearance than himself, took his position, not among the auditors, but upon the right of the platform, and surveyed the hall with a grand and lordly look that impressed every beholder.

There was a brief silence, and then began a still more noisy manifestation in the rear. The thumping was louder, and there were subdued shouts and cheers, and as I turned I saw the colossal figure of Winfield Scott. A powerful combination had been formed to run him for the Presidency, and his partisans then present seemed resolved that he should not be overshadowed by demonstrations for others. The noisiest stamps and the loudest cheers came from patriots, anxious to serve their country under so gallant a leader. "Six feet six in his

stockings," in showy plumage, with great elation of countenance, and a jaunty step, as he moved down the aisle, the heights of Queenstown, Lundy's Lane, Cerro Gordo and Chepultepec seemed to wave around him.

Soon after this, Jenny Lind came forward and sung a song, the music of which was almost lost in the surprise at the wonderful power and compass of her voice. She retired, and for a few moments there was a perfect silence. Suddenly a tremendous jarring began. It seemed, for a moment, as if the columns in the rear and the galleries might be tumbling down together. The tall form of Mr. Clay, in beautiful dress, was there. With bright looks, and graceful bows, and waves of his hands he, with imperial air, acknowledged the welcome. The applause was extended over the entire hall, was deep, heartfelt and universal. It seemed as if the audience, ashamed of its demonstrations to lesser favorites, would make amends by turning with renewed loyalty to its great idol.

The feeling was inspired by no idea of reward, no hope of future triumph. It was rather akin to those emotions with which we regard the memory of Sir William Wallace, or of Kosciusko. They knew that he was dying; that his political sun was sinking below the horizon; that for him, there would be no returning day; that never more would he meet the eager grasp of ardent partisans, sanguine of coming triumph; that never again, in his name, would the banners wave over shouting multitudes. A great image was passing, had in fact already passed from the American mind, leaving a sadness "deeper than the wail above the dead." No one then present perceived this more clearly, or perhaps felt it so deeply as did Mr. Clay himself.

An incident which occurred a few weeks later, brought vividly to my mind this truth. The session closed on the fourth of March, and owing to the pressure of Congressional business, I had not seen Mr. Clay for many days. Such was his health that it seemed doubtful if he would again return to Washington. The Senate was detained by some executive business, and was for awhile sitting with open doors, during the consideration of a contested election case. Not being willing to leave without seeing Mr. Clay, I walked in, and after the usual salutation said to him, "I called last evening to see you, but you were out." "I am very sorry," he replied, mentioning where he had been, "Come this evening—but no," said he, seeming to recollect suddenly, "I am to dine with Sir Henry Bulwer, but you must come and see me to-morrow evening." "No," I replied, "I leave in the morning. I only called to bid you farewell. I shall be a candidate for re-election, but you know that politics are uncertain things, and we may not meet again. I wish you to know that though I have of late opposed some of your measures, the greater part of my life has been devoted to the effort to make you President." A wonderful change instantly came over his countenance. It seemed as if that remark called up to his mind, the images of thousands of friends, who had labored so long, so ardently and so vainly for his promotion. The tears fell on his flushed cheeks, he covered his eyes with his hands for a moment,

suddenly recovered himself, and taking me by both hands, said in a subdued voice, "I know it, my dear fellow, and am very grateful for it."

His disappointment was equally shared by Webster and Calhoun. They all, however, had the good fortune to die while their great intellects were still in their meridian splendor, "before decay's effacing fingers" had robbed them of a single element of strength or grandeur. Mr. Calhoun's last speech ranks among his greatest efforts. When it was impressively read by Mr. Mason, in a fine masculine voice, as Mr. Calhoun sat by his side, thin, and pale as marble, the gesture of his brow, the active and incessant compression of his lips, his rapid glances from Senator to Senator, with an eye as bright as that of the wounded eagle, told unmistakably that there was no cloud on his intellect, and that his high heart was still unbroken.

More than an hour passed alone with Mr. Clay, shortly before his death, as he lay on a sofa, because too feeble to sit up, and with a cough so distressing that it was almost impossible for him to utter a complete sentence, showed that while his mind was oppressed by the forebodings of great evils to the country, his intellect was undimmed and the deep current of his patriotism rolled on with undiminished volume.

The Baltimore Convention of that summer had taken away Mr. Webster's last chance for the Presidency. Towards the close of August, being with him on the last day that he ever passed in Washington, though a shade of sadness rested on him, his intellect never appeared more grand, nor did his great heart ever seem to be filled with more generous and noble emotions. They have all passed on, and joined the throng of the mighty dead, whose actions have made the great current of humanity in the past, and the recollections of which in the future are to incite their countrymen to the performance of deeds of courage and glory.

As the memories of honored ancestors sustain us against temptation, and in the hour of peril, so do the accumulated glories of past ages, constitute the moral force of nations. The belief in the Athenian mind, that on the day of Marathon the shade of Theseus had marched in the van of their countrymen, and by the strokes of his flashing sword reddened the waves of the Ægean Sea with the blood of their enemies, sustained their banners at Salamis and Platea. A great oath sworn by the manes of their heroic ancestors, who had fallen in these battles, seemed to Demosthenes the strongest appeal to revive the slumbering patriotism of his degenerate countrymen.

The action of the first Brutus overthrew many a tyrant after Tarquin before it culminated on that day, when, in the Roman Senate hall, it "made the dagger's edge surpass the conqueror's sword in bearing fame away." The announcement that the victories of Cæsar were embarked on his frail boat, steadied the trembling hands of the timid pilot amid the waves of a stormy sea. At the foot of the pyramids in Egypt, to inspire his followers, Napoleon reminded them that the deeds of forty centuries looked down on them from the top of those monuments. The fact that the old guard had never recoiled in battle,

had never failed to carry victory in its charge, caused the exclamation at Waterloo, "The guard dies, but does not surrender!"

Great as is the superiority of a veteran army over one composed of only recruits, its condition, if once demoralized, is even more hopeless than that of raw levies. So is it with nations. It is almost impossible that a people once great, who have become degenerate and corrupt, can ever again take a high position. If then, nations, by some fixed law of nature, like individuals, have their rise, their progress and their decadence, how can the United States attain the greatest vigor, the highest excellence, and the most prolonged existence, as a people? Shall we rely on our more general education, and greater diffusion of literary intelligence? The Greeks, who so easily fell a prey to the Roman armies, were much more highly cultivated than were their ancestors, who resisted the Persian invasions. It was in the Augustan age, when art and literature were at their height, and the empire almost boundless in its extent, that the loss of some legions in Germany caused the Emperor to tremble on the throne of the world. His subjects were craven-hearted, because the deeds of Camillus, of Scipio, and of Marius, instead of being great present realities, were but shadowy traditions, seen dimly through the mists of luxury and effeminacy. It was a ruder, a sterner Rome, whose citizens reverenced the images of their ancestors, who had known no divorce for five hundred years; whose word lacked neither bond nor surety; who believed that at the lake Regillus, Castor and Pollux on white steeds had ridden, lance in hand, with the ranks of their heroic countrymen. This was the Rome that "arrayed her warriors but to conquer."

The sensual teachings of the voluptuous epicurean schools, and the derisive skepticism of Lucian, had marched in advance of the barbarian armies, and by destroying both public and private virtue and religious faith, as sin opened the gates of the infernal regions, had made a broad and easy road for political and national death.

Already does our young and vigorous republic show such premonitory signs of demoralization as justly to alarm us for the future. We hear, without general condemnation, the startling proposition that dishonest men are to be made upright by giving them abundance of money; that avarice can easily be gorged and satisfied, and that the man who is hired to be honest to-day, will be firm against temptation to-morrow. Instead of wolves being killed or driven away, they are to be rendered harmless by letting them work their will on the sheep.

We find, too, a general disposition in the public mind to excuse wrong doers, and extend sympathy to criminals rather than to their victims. As an excuse for relaxing the laws, it is asserted that juries will not convict if punishment is made severe. But if juries fail to do their duty, it is because they have been misled by a mistaken press, and a vicious public opinion, that inculcate the doctrine that it is barbarous to punish men for crimes. The tolerance is even more striking with respect to those acts that are not accompanied with violence. Such crimes, however, being usually deliberate, indicate a

higher degree of moral guilt, and are more corrupting in their tendencies. Open murders and highway robberies are less seductive as examples to young minds, than are successful and lucrative frauds.

When the public and private morals of a nation are in the best condition, indignation is felt towards criminals, and punishment is made adequate. The old English Judge was, perhaps, not far out of the way when he denied the claim of the French to be greater than his own countrymen, and asserted that England was unquestionably superior, because more men were hanged in England in one month than in a whole year in France. Lord Chatham while commending the steel-clad barons of the olden times, declared that he would not give three words of their barbarous Latin for all the classics of the silken barons of his day.

There is with us at present, not only a relaxation of morals, but the very tendency of public discussions as often conducted, seems calculated to lower the tone of the community. Demagogues attempt to palm off on the ignorant portion of their audiences, buffoonery for wit, and by coarse images win the applause of those whom Shakespeare has denominated "barren spectators." They forget that the effect of such counterfeit eloquence is easily removed by the next clown who may chance to come along. Even when public positions are thus won, the officer frequently derives as little credit from his success as the public does advantage. Though Æsop's ape, by his antics, carried the day against the fox, and became king of the beasts, yet his reign was neither felicitous to himself nor honorable to his subjects. It is little less discreditable to an officer to disgust the public by his incompetence, than it is for him to be ejected for official corruption.

When, too, the compensation of members of Congress was only one-fifth of what it has since been made, there were no charges of bribery against them. As all the great men I have named served at the low rate of compensation, it is idle to pretend that competent men can only be obtained by large salaries. By offering money as the inducement, you catch the avaricious and the greedy. How, then, are we to resist the downward tendency? A mere profession of Christianity will not avail, for the modern Italians do not present us with such examples of heroic fortitude as did the early martyrs. Education undoubtedly shapes the human mind, but all educations are not alike. It required as severe training to render the Spartan content with his black broth, or to induce the Mohawk Indian to travel for weeks on parched corn, as it does in our day to make the finished opera dancer, or the voluptuous fop who imagines himself the perfection of humanity.

When the youth of the country are trained to consider wealth, luxury and refinement as the chief objects of man's existence, are we to be astonished that they do not present us with examples of heroic self-denial and noble patriotism? "Do men gather grapes of thorns or figs of thistles?" When tares are industriously sown, can the husbandman expect an abundant crop of wheat?

While considering the subject of popular oratory, it is well to remind the young men of the country that those minds that are capable of

retaining impressions permanently, are not to be carried away by mere buffoonery, and recitals from the jest book. The men who are to control the destinies of the country are chiefly to be influenced by appeals to their intelligence and higher moral feelings. Religious movements are impelled by such earnest advocates as Peter the Hermit, Luther, Knox and Wesley; Senates are controlled by the grand eloquence of a Demosthenes, and the lofty appeals of a Chatham. Revolutions are inaugurated and driven forward by the fiery enthusiasm of a Henry or a Mirabeau. Those in our day who seek to advance the welfare of the country and to acquire honor for themselves must select these high models for their imitation. With a purpose to aid such aspirations, I have presented for your consideration the great triumvirate, who sought not power by shedding the blood of their countrymen, but only to occupy the domain of intellect, of eloquence, and of patriotism.

ADDRESS

DELIVERED AT DAVIDSON COLLEGE, NORTH CAROLINA, JUNE 25, 1873.

By Hon. T. L. CLINGMAN.

GENTLEMEN OF THE PHILANTHROPIC AND EUMENIAN SOCIETIES:

When attempting a compliance with the invitation given me, I am not insensible to the difficulties of the undertaking. Many such views and suggestions as are, at the same time, truthful and appropriate to an occasion like this, have doubtless been presented by previous speakers. By going out into the boundless fields of error and fallacy, one might easily find novelty. Perhaps the utmost that could be hoped for, would be to present just considerations in such a manner as to render them interesting and impressive. Even if, therefore, I should unintentionally repeat something that had already been said by another, your time might not be entirely misspent. The agriculturist finds that it is not sufficient for him to have gone once only over his ground, but that constant effort is necessary to keep in subjection the rebellious forces of nature. So in the intellectual and moral world, to combat adverse influences, true views must be presented and urged from time to time. Unless this be done, the most important facts and principles pass from the human mind.

The effect of sound teaching is, in part, to anticipate experience. If wisdom herself were to speak to-day, you would not, perhaps, be willing to adopt her views. But as a student, who has carefully read the proper books, will by practice rapidly acquire knowledge necessary to make him a first-rate lawyer, so if sound theories are clearly and for-

cibly presented to you, the consideration of not many facts will be sufficient to bring your minds to a just conclusion. When a law in mechanics, or chemistry, is stated, a few trials are sufficient to establish its truth, and you are relieved from the necessity of groping in the dark through a multitude of experiments.

In some of the past ages, the mind of man seems to have been regarded as an empty vessel, into which one thing might be put as easily as another. In the monkish period, even if natural propensities and faculties were recognized, it was supposed that they might be eradicated or entirely suppressed We should, in fact, destroy a young vine by striving to press it back into the earth, but its course and form may be easily modified and directed. Instead of the paradox of Bacon, that "you can only govern nature by obeying her laws," I would say, that we only derive advantage from the natural laws when we act in accordance with them.

Our present systems of education are still faulty in this respect: that they do not sufficiently recognize the diversities of the human constitution and intellect. The most stupid wagoner knows that if he bestows as many blows with his whip on the spirited horse as he does on the sluggish one, the finer animal will be destroyed. In like manner, if the boy of quick intellect and nervous excitability is stimulated, instead of being restrained, from the over exercise of his mental faculties, he is liable to be broken down early in life. Many a youth of genius is thus utterly ruined for the want of as much knowledge of his bodily and mental organization as a month's proper study would give him. The same amount of labor which invigorated the robust constitution of Benjamin Franklin, would have destroyed Lord Bacon early in life. Many a young man, after he has sustained irreparable injury, learns, but too late, that which, if earlier known, would have saved him from ruin.

But young gentlemen, you who now stand, as it were, on the threshold of active life, and, like the trained courser, are eagerly waiting the tap of the drum that you may start away on the career which lies before you, I know your thoughts and feelings. You desire to attain the greatest good, to secure to yourself the largest share of human happiness. Diverse as may be the objects you seek, they are chosen upon the supposition that they are capable of furnishing what you desire. You perhaps believe that there is some one thing, which, if attained, will make you happy. The sooner you dismiss such an illusion, the less your disappointment.

Those who, after acquiring great wealth by their own efforts, have sought merely to enjoy it, avow their complete disappointment, and are usually obliged to re-embark in business. Several wealthy young men, whom I knew in college, afterwards assured me that they would gladly give away all their property, if by so doing they could acquire the capacity for cheerful labor that some others possessed. If man's faculties were as limited as are those of the swine, wealth alone would give him all the happiness of which his nature was capable; but be assured that there is no one thing which can of itself render man happy. The only enjoyment we are capable of is that resulting from

the exercise of some of our faculties. Recall, if you please, every sensation of pleasure you have ever experienced, and you will find it was the result of the exercise of some bodily or mental power. Sometimes it is delightful to use the muscles in walking, dancing, or the canter of a spirited horse. Music, intellectual perceptions, theatrical representations and novel reading, by calling into action, successively, various faculties, furnish us a large number of our most agreeable emotions. The gratification of our animal passions and tastes, and the exercise of the domestic affections, give us many of our greatest enjoyments. There can be no pleasure to humanity except from such sources.

But again, every one of these faculties may be so fatigued by continued exertion, that painful sensations will result. If over-work has been long continued, and the pain has become great, then rest alone gives high pleasure. Every one knows how delightful it is after a fatiguing walk, merely to lie down. But the most important law of all in this connection, is usually lost sight of. There can be no high degree of happiness without previous want. If a man were to resolve that he would live merely for the pleasure of eating, what ought he to do? If he remained at home and ate the finest viands as often as his appetite could bear them, he would find little enjoyment. Clearly it would be of advantage to him to fast for a season. When one has for a time been deprived of food, he will experience more real pleasure from a single meal than he would from a month's regular feeding. The traveler, the hunter, the fisherman, all by their experience, will confirm this truth. How delightful it is, when one has been long suffering from thirst, to take a draught of pure water! You will readily admit that it is true that our animal appetites are easily gorged, but a similar law operates with respect to all our faculties. The finest concert, if indefinitely continued, would become painful. To enjoy greatly the comforts of home, one must have been absent for a time. The sublimity of Milton, and the wit of Hudibras, fatigue us by long continuance.

The law seems to be that we can only derive enjoyment by the alternate exercise and rest of the several faculties. If you desire a high degree of pleasure, you must abstain for a long period. Should you, on the contrary, be satisfied with a low stage of happiness, a sort of vegetable existence, then you may continually call on your faculties. The bow, perpetually bent, expands with little force, and every one may, therefore, decide for himself whether he will take a high enjoyment, with great exertion, or be content with a low state of pleasure, obtained by a languid existence.

But again, all the human faculties must be exercised to insure a healthy condition of the system. If any one piece in the complicated machinery of a steam engine should give way, mischief results, because there is no part of the engine that is not necessary to its successful working. In like manner, there are no useless organs in the human body, or faculties in the mind; and hence, if any one of them were destroyed, injury would result to the constitution as a whole. But, with striking resemblance between the two, there is, for man, an unfor-

tunate difference. Even if parts of the steam engine remain at rest, they retain their full strength, but in the case of the man, any one of his organs or faculties, not exercised, loses its power; and hence, the whole system suffers.

It would seem, therefore, that any one who selects an occupation that his judgment approves, ought to have the same chance for happiness in life; but while most persons will admit the truth of such a proposition, there is a constant tendency in the human mind to ignore it. If a man should seek to find an exception to the law of gravity, or to invent perpetual motion, he excites ridicule, because it is clearly seen that there are no exceptions to the physical laws. But men constantly act as though they hoped to find exceptions to the moral laws. Many hug the delusion that distinguished position, high public eminence, will give more happiness than is to be found in the walks of private life. This means to the ambitious American mind that it is well to become a member of Congress, a president, or a distinguished military leader. As so few persons can be thus gratified, it is of the utmost importance that such a delusion should, if possible, be dispelled and countless disappointments be prevented.

During sixteen years, I had in Congress an opportunity of knowing much of the members, and though they were generally men of worth and industry, I am satisfied that their enjoyments were not above those of the average of their fellow-citizens. They usually left public life with the conviction that their labors had brought them neither the thanks of their countrymen nor happiness to themselves. Six of the presidents were personally known to me, and I have no hesitation in saying that of all the public functionaries I ever knew, they were during their terms of office, the least happy. No one else had so much care and vexation, was compelled to labor more incessantly, had so few thanks, or seemed so thoroughly disgusted with his position. Unless they left the office with the consolation that they had done their duty, they were the least fortunate of men. Even in that event they had no advantage over any private citizen who is able to say, I have done my duty honestly through life.

But you may say these were not great men, or they were unlucky, and you may promise yourself something better. Let us then for a moment consider the first Napoleon, unquestionably the most wonderful man of modern times, in the opinion of many, of all times. His extraordinary achievements, his long and brilliant career, are too familiar to need recital. But he led an army into Egypt, and when the clouds of disaster lowered upon him, he secretly abandoned it. He conducted five hundred thousand men in an expedition to Moscow, and leaving them to perish, he again sped back to Paris. At Leipsic, after a decisive defeat, abandoning all to McDonald and Poniatowski, he for the third time fled away. When his star went down forever at Waterloo, leaving his old guard to die for their own honor, a fourth time he carried in person to his capital the news of his defeat. In all these cases he abandoned the men whom he had led into danger. If one man were to follow you into an enterprise attended with peril, could you desert him and save yourself by flight? Is there one

person who now hears me that would be willing to bear in his bosom these dark recollections of the thousands thus abandoned, for all the glories of Marengo, the campaign of Wagram, and the sun of Austerlitz?

You may truthfully say that Napoleon was a guilty man and could not be happy. Then look to George Washington, who, by the universal judgment of the world, for the eminence of his moral worth, and the great results accomplished by him, stands as the most foremost and the most fortunate of men. Pass by the toils and disappointments of his earlier years, trace him through the entire period of the Revolution as the most anxious, the most thoughtful, and the gravest man in the American army. He, above all men who have lived, perhaps, seems most to remind one of the demeanor of the Saviour of the world, melancholy even to sadness. And during his administration of the Federal Government, he appeared to be oppressed with care and weighed down by anxieties. His whole life was like that of one to whom had been entrusted the carrying of a casket of precious jewels, on a perilous journey, which could only be preserved by sleepless vigilance. To make amends for his extraordinary toils and sufferings, he had the consolation of having done his duty, under trying circumstances.

Were these great men peculiar, or exceptional in their career? The gifted Alexander, after his conquest of the world, died in a fit of drunkenness, while Julius Cæsar, probably the first of men, in genius, talent, courage, magnanimity, accomplishments and achievements, fell by the daggers of trusted friends. Nor was the puritanical Cromwell more happy than the voluptuous Grand Monarch of France. We imagine great men to be happy, because we see only their prominent features, which glare before the public eye, while their inner life is hidden from us. Their brightness is but the enchantment which distance lends. On a near approach it fades away as the blue of the mountain becomes rugged rock, its smooth and green slopes are converted into thickets of tangled shrubs and brambles, and its cloud, so white in the sunlight as to dazzle the eye, is seen to be only dark mist.

It was once my fortune to witness a remarkable spectacle, the review of the army of Italy, on its return to Paris, on the 14th of August, 1859. The entire area of the magnificent Place Vendome was converted into an immense amphitheatre, with velvet-cushioned seats, and graceful hangings of crimson and gold, and gay festoons and countless flags, and ornate columns, surmounted with gilded statues of victory. Between the great triumphal column of Napoleon the First and the balcony of the Empress, formed of cloth of crimson and gold, and alike tasteful and splendid, there was barely left space enough for the army to pass. And as the eighty thousand picked men, covered with the fresh green laurels of Magenta and Solferino, with elastic step, came along down the Rue de la Paix, their glittering bayonets, gilded by the sunbeams, reminded me of a field of ripe grain gently waving in the breeze. With rapid pace they swept by, with cheering shouts, and the music of an hundred bands, and their

varied equipments and arms, infantry, Voltiguers, Zouaves, Turcos, Guards Imperial, artillery, mailed and crested cavalry, with captured cannon and banners, dinted or torn, fitting trophies of victory. roundings, and that immense assemblage of intelligent and polished Lo king at their splendid array, with its imposing and gorgeous surspectators, such as the modern civilization of Europe and America could alone furnish, I felt confident that that day's pageant surpassed any that had hitherto been presented to the eye of man. The Roman triumphs came up in fancy before me, and remembering that Cæsar had won the empire of the world at Pharsalia, with only twenty-two thousand men, a victory which any one of the batteries then passing would, if used against him, have converted into a defeat, I compared the display before me with that which the narrow streets and comparatively rude population of Rome would have furnished.

As the strains from one of the martial bands filled the air, my mind went back suddenly to the first Roman triumph, when Romulus, in his robe of state, and with laurel crown on his brow, singing a song of triumph, marched along on foot, and carried on bis right shoulder, suspended on an oaken trophy, the arms of King Acron, whom he had slain in single combat. How much did the small band of desperate outlaws admire the *Great Romulus*, as with stalwart frame and mart.al tread, he strode along to the temple of Jupiter Feretrius? Was he not elated and happy in the thought that he had attained the highest reward of human ambition? Was Napoleon, the arbiter of Europe, more happy? Of all the spectators in that bright throng, he alone was deeply thoughtful and melancholy. Why was this? A man, confident of his own destiny, and at all times void of personal fear, he could not, on that day, apprehend the sharp shot, or the explosive shell of the assassin. Was he depressed by the sad thought that his career had been interrupted, and that he had failed to make Italy free from the Alps to the Adriatic? Or was he meditating on the fickleness of the breath of popular applause, and dreading the upheaval of some new revolutionary earthquake? Did he fear to fall from the giddy height he had attained, or did he simply realize the truth, that he who has climbed to the topmost round of the ladder of ambition, often seems to the public to sink because he does not continue to rise still higher? Or, did the shadows of coming events, mysteriously, and, by strange anticipation, darken his mind? I know not; but neither the gorgeous display around, nor the triumphal march, nor the spirit-stirring trump or drum, nor even the gladsome shouts of his soldiers, as they cheered their victorious commander, could change that thoughtful countenance. Only once was it lit for a moment with a smile, when his little son, in the uniform of corporal, was brought from the side of the Empress, and placed on his horse before him.

Twelve years have passed by, and that majestic column of more durable material, and grander height than those of Trajan, or Antoninus, had fallen to the earth by the hands and amid the shouts of a beastly multitude, who were far more vociferous than they had been on the day when they cheered the imperial arbiter of Europe. His

armies were all captured and vanquished, and he a prisoner in a foreign land, dying with as much pain and gloom as did his greater uncle. Pharaoh, in the Red Sea; Nebuchadnezzar among the cattle; Alexander, the Macedonian, dying in a drunken debauch; Hannibal, in exile, by poison; Julius Cæsar, stabbed by his friends; the two Napoleons, captives, sinking under gloomy defeat and painful disease; these are, by consent of all mankind, the chiefest representatives of human greatness and glory. Which of them, young gentlemen, do you envy the most, and which will you choose for your model? As in the case of the Babylonian monarch, may not all these examples have been provided, "to the intent that the living may know, that the Most High ruleth in the kingdom of men, and giveth it to whomsoever He will, and setteth over it the basest of men?"

If, then, it is evident that high positions do not ensure happiness, let us at once recognize the truth that all honest occupations are equally capable of giving satisfaction to those who are engaged in them. But whatever one finds to do, let him do it with all his might. This injunction is the more necessary to us in our present condition as North Carolinians. Within the past ten years, two-thirds of all the property in the State has been destroyed, and, therefore, it is difficult for us, with the remaining third, to support such a state of civilization as we have been accustomed to enjoy, and educate properly the rising generation. The tendency of young men to crowd what is called the learned professions, is most unfortunate. Our systems of education are perhaps partially responsible for this. They direct the attention of the student too much to the ideas and opinions of men, rather than to things. The best knowledge is not that obtained second-hand or through a medium. When one examines for himself a house, or an animal, or a landscape, he knows far more of it than any mere description could give him. The opinions of others should be regarded only as aids to us, and not as the ends to be sought. Small minds are merely able to take hold of the declarations of others. They may make dialecticians, mislead the superficial, and often acquire a great reputation for learning and wisdom, with the multitude; but when they are placed in positions where conduct and real ability are demanded, they usually show themselves childishly imbecile. It requires more breadth and strength of mind to enable one to deal with men and events. If the young men of the day wish to be practically useful, and to become really great, their studies must take a wide range, they must investigate material things, and by acquainting themselves with the forces of inanimate nature, as well as the impulses which move men, they will be better able to effect great and useful enterprises.

But the task before us, I know, seems difficult. When our great armies were beaten, our people with one accord, decided to abandon the contest. As the lion when his spring has failed, does not pursue, so they were too wise to prolong a petty and vexatious struggle as a semi-civilized community would have done, and too great-hearted to manifest hostile feelings or mortification under defeat On the contrary, it was gratifying to see with what diligence and alacrity our citizens went to work to repair their losses. Not only was great mate-

rial improvement everywhere in progress, but it was astonishing to observe how suddenly our people settled down into the routine of quiet life. Probably in no period of our history, were the laws more successfully administered, and private rights better protected, and the community as a whole, more peaceful, than throughout the year 1866. The United States, however, thought proper to abolish our State government, to disfranchise most of those citizens whose capacity and training fitted them to discharge public business, and also conferred the right of suffrage and to hold office on a large class without experience or knowledge. That to effect these objects, the Reconstruction Acts were necessary, I do not question, for our own people would not of themselves have either disfranchised their leading men, nor given, universally the right to vote and hold office to the liberated colored men. It would be out of place at this time, for us to enquire whether we might not have so acted, as to have greatly lessened the mischief caused by these proceedings.

Their immediate effect has been, for the last six years, to afflict us with governments which, to use the mildest terms, have, whether we consider their legislative, executive or judicial action, proven themselves utterly incapable of properly transacting the business of the State. Our credit has been completely destroyed, and our people have been demoralized, politically and financially, though not as yet socially. As a State, we cannot at present do much, directly, to advance our material prosperity, and as individuals, we have to struggle against great odds. The influx of capital and emigrants is prevented. When abroad, I often hear such questions as these: "What are you going to do about your State debt? will you repudiate? I am not willing to live in a repudiating State. Is not your taxation oppressive? When can you have a better system of government? I would like to invest in your State, or move there, but I am afraid." The present tariff and internal revenue systems, which are onerous even to the Northern States, fall with oppressive weight on our crippled and feeble community.

These burthens, however, great as they are, may all be borne. The fact that no one who was true to the State in the late great struggle can, during the present generation, hope to become President, or attain any similar high position under the government, is not a serious evil. The less the love of office be stimulated, perhaps the better for our people in their present condition. The Jews under political bans, in every country in Europe, during the middle ages, became the wealthiest and the most enlightened people of those days. It will be time enough for us after we have restored our own material prosperity, again to aspire to control the destinies of our common country. To our young men who may think of embarking in public life, I would say, that the chief defect I found among the members of Congress in former times, was the want of moral or political courage. An hundred times has it been said to me "this measure is right and ought to pass, but my constituents do not understand it, and if I were to vote for it they would beat me." Or, perhaps, this would be stated, "this thing is all wrong, and I hope you will be able to get it defeated, but

my people are in favor of it, and if I don't go for it I will not be able to get a nomination again." Several members from North Carolina took positions on an important issue against what was regarded as the popular feeling. Some of them afterwards, to break the force of the opposition they feared, modified their positions. They were all beaten, while the two members who stood firmly by their opinions, were triumphantly returned.

Nothing gives a man so much force in discussion as the conviction that he is in the right, nor is any adversary so dangerous as one honestly in error. I would rather fight against the most ingenious sophist than such a person. If I think a man right, I embark in no contest with him, for I know that any partial advantage gained would be only like the fruit of the Dead Sea. If a man will take invariably that course on public questions which he sees to be right, he will always feel proud of his position, and will be able to defend it with an earnestness and force that will generally carry his hearers along with him. The conviction of being right, ever present, is worth more to him than the erroneous opinions of a thousand.

Again, the result of the late civil war does not of itself prove that we were, as a people, less worthy than our opponents. The Philistines, who for forty years at a time made the Israelites hewers of wood and drawers of water, were not themselves less idolatrous and wicked. No man in England did so much to promote the reformation as Henry VIII, sensual, bloody and brutal tyrant as he was. The locusts that came out of the bottomless pit to punish wicked men for five months, were themselves but the subjects of Apollyon, and returned again to his dominion. "The ways of Providence are past finding out, and are wiser than the imaginations of men." It will be for us by our actions hereafter to show whether we are better or worse than our late opponents. There should be no hesitation on our part, in conceding to the Northern men the same sincerity and public spirit we claim for ourselves. It is evident from the debates in the convention which formed the Constitution of the United States, that there were certain great questions at issue, on which no agreement could be effected, and they were, therefore, by common consent, left to take the chances for settlement in the future. While constitutional guarantees, and present pecuniary and social interests were largely on our side, the general feeling of the civilized world, ignoring the distinction of races, was Cornfavor of personal liberty, and thus against us. Hence, when at, after a was begun, it was but natural and proper that each citizard as the stand with the community in which he lived, as when belongs the between separate nations. Jackson to th

For the great war itself North Carolina was not, as e her sons responsible. Soon after its close, in Decentry, and no ot the present Vice-President of the United States in d North Caro he said to me, "I am glad the war is over; it coul me in 1864, ent avoided; the people of the North were determined toother State. er and you, in the South, had too great an interest in o little since the without a fight." A few weeks later, in New York, Govour own citizens, certainly intellectually equal to any statesman of the ome of the most

me that he had, at the beginning of the war, been inclined to condemn the course of the Southern men in seceding, but that he was then convinced that the collision could not have been avoided. General Martindale, in his address to the Grand Army of the Republic, in Philadelphia, since, has stated, with great clearness and force, that the war was the result of causes for which the people of neither the North nor of the South, of this generation, were responsible; and that those who fought on both sides had borne themselves like brave and honorable men in a cause regarded as just. Such is now, apparently, the conviction of all the leading statesmen of both parties in the North. From 1850, down, I had a conviction that such a collision could not be long postponed except by a foreign war. Regarding that as the less of the two evils, I, therefore, as a member and Chairman of the Committee on Foreign Affairs, endeavored to induce both Presidents Pierce and Buchanan to go to war with Great Britain, who had furnished us ample grounds for such an act by her persistent efforts to produce a civil war in our own country. An union of the remains of the old Whig and Democratic parties, in 1860, might probably have postponed the difficulty for a few years, or caused a different termination of the contest.

Even for the preceding state of affairs, which caused the war, North Carolina was not responsible. The African slaves were imported originally into the colony under the orders of the British Government, and when the Revolution began, the first North Carolina Congress passed a resolution against the slave trade. During the formation of the Constitution of the United States, North Carolina, with the Middle States, voted against the continuance of the trade, but was overborne by the united vote of the New England States, aided only by South Carolina and Georgia. In addition to these things, the Constitution of the United States, which we only adopted after two years refusal so to do, contained the strongest guarantees for the protection of the exciting system. Had we, therefore, quietly submitted to have our constitutional rights disregarded, one-third of our whole property confiscated, and our social system destroyed, we should have been a mark for the finger of scorn, and would, ever after, for our mean cowardice, have been regarded as a reproach to humanity. A people, that voluntarily consents to be trampled under foot and thus degraded, [illegible] itself up to demoralization, corruption and ignominy. By people in [illegible] resistance we have not only retained our self-respect, but every coun[illegible]e confidence and esteem of all the enlightened nations of [illegible]thiest and th[illegible] would a thousand times rather be pointed to as the indi[illegible]nough for us [illegible] lost most in the great struggle, than to have come out of[illegible]ain to aspire t[illegible]nd prosperous.

[illegible] young men wi[illegible]at a different result, might by other counsels, have bee[illegible] that the chief [illegible]ndividually, I had such an opinion, and wrote to a [illegible]om[illegible]r times, was t[illegible]lotte, in 1856, advising that we should rather strive d[illegible]he[illegible] times has it [illegible]ment, and make the fight in the Union. At some pass[illegible]out my cons[illegible] collision of arms began, North Carolina, by taking for it they would [illegible]enting an ultimatum through the action of her con[illegible]thing is all wrong, [illegible]obably have given a different turn to the contest.

As, however, she did not think proper to attempt to control the movement after several of the States had seceded, and the war had been begun, a proper regard for her safety and honor left her no alternative. Having then done what could not have been honorably avoided, why should we not be content with our action? Providence has relieved us from the responsibility and care of the African race, and given us a new social system. Time will enable us to decide if this is not in the end advantageous to us. If the change has been attended with great privation and much suffering, let us not forget that adversity, though painful, rightly borne, gives fortitude, purifies and ennobles.

The past is secure to us. If, as it has been alleged, the government was, up to the year 1860, mainly under the control of the Southern States, we may well accept such responsibility. During this long period there were no charges of bribery against Congressmen, except that just before the commencement of the war we expelled several members from the Northern States, not because they had taken bribes, but had merely expressed a desire to obtain money in improper modes. No great government in modern times has existed, that for such a period was so pure in its administration, so economical in its expenditures, and so light and moderate in its taxation. How it has since been we will not pause to consider. I know, however, so many good and noble men in the North, that I cannot doubt but that with our earnest aid, great improvements may be made in the administration.

There is nothing in the past history of our State to prevent her taking a most prominent part in such a movement. Ten years before the Boston tea-party, disguised as Indians, in the night-time, threw the tea into the harbor, North Carolinians in open day arrested the stamp-master in Wilmington, and carrying him into the public square, compelled him to swear that he would never attempt to execute the Stamp Act. More than four years before the fight at Lexington, two thousand North Carolinians were engaged in battle on the Alamance against Tryon, the British governor. The Declaration of Independence made in this county, preceded by more than a year that proclaimed in Philadelphia, and during the entire struggle, old Mecklenburg, by the testimony of Cornwallis and Tarleton, bore the palm of being the most rebellious county in America. The defeat of Ferguson, on King's Mountain, enabled Greene to so cripple Cornwallis at Guilford Court House, as to oblige him to retreat, after a battle which Thomas H. Benton, and many others, regard as the turning point of the Revolution. While to Virginia belongs the honor of Washington's birth, this county gave Andrew Jackson to the country.

Our late great contest was mainly fought by infantry, and no other State furnished so large a force of that arm as did North Carolina. Mr. Davis himself, in no respect partial to us, told me in 1864, that our regiments were better kept up than those of any other State. Nor did any other State lose so many men in battle. So little since the war has been written in our behalf, that few, even of our own citizens, do justice to the achievements of our soldiers. Some of the most

striking events of the war have not found a notice even in a North Carolina newspaper. It was the unsupported charge of a North Carolina brigade that repulsed Foster with his twenty-two thousand men at Goldsboro. That same brigade took the most prominent part in the defense of Battery Wagner and Sullivan's Island, and gave that confidence to the commanders at Charleston that insured the successful defense of the harbor and city. The charge of two of its regiments at Drury's Bluff, completely routed General Butler's whole command, and drove it to Bermuda Hundreds, to be there "bottled up." This brigade, with the loss of one-third of its members on the evening of June the 1st, 1864, preserved the important position of Cold Harbor to General Lee, though in consequence of the giving way of the troops on its left, it was compelled at the same time to fight enemies in front, flank and rear. On the 17th of June, 1864, at Petersburg, when two brigades on its right fled precipitately, and left a mile of open space through which a portion of the enemy passed, it drove them back—unaided it repulsed, in succession, twelve charges made by the combined corps of Smith and Burnside, forty-three thousand strong, and held the position until the enemy abandoned the contest. On the 19th of August, south of Petersburg, in a successful charge, it captured three times as many prisoners as it then numbered soldiers in its ranks. Up to this time, though it, during one period of three weeks, lost considerably more than half as many men by wounds in battle, as it ever had present at one time for duty, it was never broken by any attack. These facts are known to thousands, and cannot be, therefore, ignored or forgotten. It is but a small tribute to the courage and gallant deeds of these brave men, that I should to-day refer to some of their actions. North Carolina gave to the Confederacy more than one hundred and twenty thousand men, who, man for man, rank with any that in past ages have, embattled, stood for king or cause, for liberty or native land.

Nothing in modern warfare has approached the impetuous dash of the Confederate charge. The great Athenian rush of Marathon was again and again repeated on a far grander scale, with an utter disregard of danger, and an uncalculating devotion to their cause never previously seen in battle. Complete physical exhaustion alone arrested the movement.

Though our soldiers fell in a cause that was unsuccessful, they will not for that be forgotten. Sir William Wallace was hanged, drawn and quartered, but not for this has his memory been lost to Scotland. The thirty thousand gallant men who gave their lives for the protection and the honor of their State, for their name and their race, will not fade from the memories of their countrymen of future ages. For the consolation of their friends let it be remembered that whosoever for the cause of truth "will lose his life, shall find it," and that they who "forsake houses, or brethren, or sisters, or father, or mother, wife, or children, or lands, shall receive an hundred fold, and everlasting life."

If, then, we have in the past done our duty as a people, how ought we to meet the future? Not by merely railing at those with whom,

by our surrender, we admitted that we were not in a condition longer to continue the contest. Not by blustering after the fashion of a few among us, who seem vexed with themselves now, because in the hour of danger they did not earnestly aid us, and are striving to recover consideration which they seem to fear they have lost. Still farther be it from us to form secret bands, and in disguise, in the night-time, to make covert attacks on defenseless individuals of any race. From the day when such a movement, years ago, first overspread a large part of our country, I have regarded secret political organizations as the most mischievous and corrupting of all human inventions. The deluded and ignorant men who were drawn into the Ku-Klux and other secret societies, by men in whom they had confidence, are entitled to sympathy. When I have seen them, by the hundred, dragged over the State as prisoners, I have felt the strongest indignation against the originators of the movement, who so meanly shrunk from avowing their responsibility. Had he who first introduced the organization into the State, or assumed control of it, been possessed of a single emotion of honor or manliness, when he saw his deluded followers dragged about by deputy marshals, he would have left his hiding place, and, like Virgil's warrior, have exclaimed: "*Adsum qui feci; in me convertite ferrum.*" By such an act he would not only have released his followers, but, to some extent, entitled himself to respect and consideration.

To continue such a secret organization to control the distribution of offices in the State, is little less dishonorable. When men, while professing to be members of a great open political party, form a secret inside combination for such a purpose, they can only be looked upon as treacherous conspirators against associates with whom they pretend to be acting on terms of fairness and equality. I advise you, gentlemen, as you wish to retain your own self-respect, and as you hope to be useful to your country, as you desire the approval of good men, and of Powers higher than all earthly things, avoid such complications. When in doubt as to your public duties, it may be well to ask yourself, "If all this should become known, what would my enemies say? what could my friends think of such a transaction?"

What we now have to do, is to build up the prosperity of the State again. I fear that many are too despondent to do their full share in this great work. A horse disheartened does not draw the vehicle, a man discouraged accomplishes little, a people demoralized seldom prospers. Our noble women have, by their conduct, told us what we ought to do. Before the war, it seemed to me that nothing could add to the respect and admiration I felt for them; but when, during the great struggle, I witnessed their resignation under privations, their sacrifices and their labors, and have since observed how, under defeat and poverty, they have not failed in every honorable and proper work for their hands, I admire and reverence them far more than I ever did in the days of our prosperity. If every one of us would, for five years, labor as earnestly as we generally did during the war, and live as economically, we should be, at the end of that period, far in advance of what we now are.

You may say it is impossible to bring our community up to this. Then, at least, let us striveto come as near it as we can. When in the midst of labor that is vexatious or oppressive, nothing comes so frequently, perhaps, into the mind as the words, "My meat is to do the will of Him that sent me, and to finish His work." Those whom St. John saw continually before the throne, arrayed in white robes, were "they which came out of great tribulation; they hunger no more, neither thirst any more;" and there they will remain forever.

A thousand instances prove that a great pressure of evil, borne with fortitude, prepares us for future triumph. When their town had been burnt by the Gauls, the Romans did not abandon it, but having expelled the invaders, by their energy rebuilt it, and in time made it the first city in the world. The Jews, though wanderers for thousands of years, have retained their faith and their traditions. Even the Gipsies, rambling for a like period among many peoples and nations, have, in spite of their ignorance and poverty, preserved their identity. As we have made a fair and manly contest to maintain the political, industrial and social conditian, which came down to us from our fathers, why should we indulge in vain regrets? Abandoning, as far as possible, all gloomy thoughts, let us, stimulated by past recollections of prosperity and honor, look to the future. Though the lines of this generation have not fallen in pleasant places, we may lay broad and deep the foundations of prosperity and happiness for those who are to come after us.

The same system of laws in the future must operate on us and also on the citizens of the Northern States. In the past we did not fear to compete with them on terms of equality, either in civil or military enterprises. After listening to the eloquent speech of a Southern Senator, John G. Palfrey, an Abolition member from Massachusetts, turning round, said to me, "It is by just such speeches that you have kept your foot on our necks for seventy years." When one said to Mr. Seward, "there are ten Northern men in California to one from the South; are you not willing to leave the question of slavery to the majority, when you have ten to one?" "No," he replied, "if we had five hundred to one, you would then beat us." Such declarations from those politically unfriendly, show at least that we need not dread competition in the walks of peaceful life. In war, we point to the names and deeds of Washington, Jackson, Harrison, Scott and Taylor, in the past, and later to such actions of the Southern soldiery as rise of themselves before your minds.

We have still, more than fifty thousand square miles of territory, not inferior, perhaps as a whole, to any country of equal extent. We have yet on our eastern border those broad bays and sounds, abundantly stored with such wealth as the sea contains. There are still those large bodies of alluvial lands, not inferior in fertility to the lowlands of Holland, or the Delta of Egypt. We yet have that long and broad belt of sandy loam, capable of producing wine enough for the wants of an hundred millions of people. Above this extends for nearly three hundred miles, an undulating country, that with proper tillage yields abundantly. We have also that large mountain region,

which, though it does not possess the grandeur and sublimity that renders the Alps the palaces of nature, excels them in beauty and immeasurably surpasses them in fertility, the richness of its vegetation and its adaption to minister to the wants of man. Our State possesses, in the greatest abundance and variety, all the best forest trees, with inexhaustible water power, and a fair share of useful minerals. Whatever could be produced in any one of the thirteen States, can be furnished with profit in some parts of North Carolina. Let us, then, teach the rising generation that industry and frugality are better than riches, that truth and honor, virtue and religion, will endure longer than the earth itself.

If the minds of our people are fully imbued with these great and noble ideas, if we continue in the future such earnest, energetic and grand efforts as in the past we made for our political rights, our social system, and to sustain that character for courage and honor which was transmitted to us by the actions of heroic ancestors, we shall yet place North Carolina abreast of the foremost communities of the globe.

THE GREAT METEOR OF 1860.

By Hon. T. L. CLINGMAN.

[Published in APPLETON'S JOURNAL, January 7th, 1871.]

On the 2d of August, 1860, I was at Asheville, Buncombe county, in the picturesque mountain region of North Carolina. On the evening of that day I retired to my room a little after ten o'clock. The moon was full and approaching the meridian, and the night was clear and bright. There was a window on the west side of the room, covered by a white curtain. The candle having been extinguished, my attention was suddenly arrested by a bright glare of light. It was much brighter than a candle would have been, and seemed like a sheet of flame against the window, but before I reached it the light suddenly changed its color and became beautifully white. The thought at once flashed upon me that it must be a meteor, and I saw its outline through the curtain as it exploded in the northwest. The light, at the moment of explosion, seemed as white as that produced by the burning of the metal magnesium. During the whole period that I observed the light it was greater than hundreds of moons would have caused.

On the next day I made inquiries of many persons who had seen the meteor. It was observed by a large number, because the evening was that of the election day, and also because there was a party of gentlemen on horseback in the town to receive General Lane, whose coming was expected. They all concurred in saying that the meteor was first seen in the southeast, but at a point nearer to the south than the east, that it moved toward the northwest, and when due west of Asheville appeared to be at an elevation of forty or forty-five degrees, and that it seemed

to explode in the northwest, with a great display of light. Most persons regarded it as appearing to be equal in size to the full moon, and all agreed in saying that the moonlight was nothing in comparison with its brightness. When first seen in the southeast, it seemed of a dull or pale red color, and became brighter as it moved along, until it resembled the sunlight.

Persons from the surrounding country made similar statements as to its appearance. Colonel C. M. Avery, who saw it while in Morganton, sixty miles to the east of Asheville, described it as not materially different in position and aspect; while persons in Franklin, seventy miles west of Asheville, spoke of it in similar terms, except that it seemed to them higher in the heavens to the west, and more nearly over them. In a few days the newpapers from Knoxville, Tennessee, and from Columbia, South Carolina, came to hand, with similar descriptions, representing the meteor as having passed on the west side of both of those places. When the Raleigh *Register* arrived from the east, it contained a very clear and minute description of it from the pen of Mr. B. F. Moore, one of our most eminent lawyers. In a few days I saw descriptions of the meteor in two successive numbers of the New York *Herald*, of the dates of August 7th and 9th. These numbers contained extracts from newspapers, and also letters from various persons, at points widely distant, and covering a great extent of territory.

The most easterly notices were from Guiney Post Office, Caroline county, Virginia, and from Pittsburg, Pennsylvania, and the most westerly, from Montgomery, Alabama, Holly Springs, Mississippi, and Nashville, Tennessee. The telegraphic correspondents said next day that it had been seen simultaneously at New Orleans, Memphis, Cairo, etc.; and while, according to the statement of two of the papers at Nashville, it was seen to the east of that city, it appeared to pass on the west of Cincinnati, and several other places north and east of it in Ohio.

The course of the meteor would seem to have been along a track nearly over the State line between South Carolina and Georgia, then directly above the county of Habersham, in the latter State, near the western extremity of North Carolina, very little to the east of Athens, Tennessee, but west of Knoxville and Cincinnati, and east of Nashville.

I will, in the first place, ask attention to the facts bearing on the subject of the height of the meteor while visible. Raleigh, North Carolina, and Holly Springs, Mississippi, are at least six hundred miles from each other. A few days after I read Mr. Moore's precise and elaborate statement, he and I went to the spot where he had stood at the time he saw the meteor. By means of certain trees and houses, he was able to indicate the line along which it had traveled. By taking the directions with the aid of a compass, it was shown that he observed the meteor when it was twenty-four degrees south of west, and that the point where it was last seen by him was also when it was twenty-four degrees north of west. He saw it continuously as it passed over these forty-eight degrees, but, Holly Springs being a little south of west only, he necessarily saw it at the time when it was in the direction of that place, and he estimated its height as being thirty degrees above the horizon.

From Holly Springs we have a carefully prepared and apparently very accurate statement from Mr. J. H. Ingraham, corroborated by the

letters of several other gentlmen. From that place the meteor was first seen in the southeast, passed on the east side going northwestwardly, and disappeared in a direction west of north.

At its greatest elevation, and when east, it appeared to be thirty degrees above the horizon. It is clear, therefore, that Mr. Ingraham and the other gentlemen must have seen it when it was in the direction of Raleigh. Both observers, therefore, saw the object when it was directly between them, and each estimated it as being at an altitude of thirty degrees above the horizon. If it was equally distant from each of them, and I take it that such was very nearly the fact, it was above a point on the earth's surface not less than three hundred miles distant from them. To be seen at such an altitude, it must, therefore, have been not less than one hundred and fifty miles above the earth's surface. Even if it were only twenty degrees in height apparently, it would in altitude be more than one hundred miles above the earth.

Mr. Samuel Schooler, principal of Edge Hill school, at Guiney Post Office, Caroline county, Virginia, was distant more than seven hundred miles from Holly Springs, and saw it first in the southwest, moving toward the north, and disappearing in the west, or over the State of Kentucky. He states its altitude as being, apparently, twenty degrees above the horizon. As he must have been four hundred and fifty miles distant from its path, his estimate would give a similar or even greater altitude to the meteor. Caroline county and New Orleans are fully nine hundred miles apart, and, if it passed midway between them, it might well have been seen by observers at both stations.

When all the statements published are considered, there would seem to be no reason to doubt but that this meteor, when distinctly seen between Raleigh and Holly Springs, was more than one hundred and less than two hundred miles above the earth's surface. If, therefore, the common opinion be true, that meteors are rendered visible only by passing through the earth's atmosphere, then that atmosphere must extend much more than one hundred miles from the earth's surface. This very meteor affords a strong proof of the correctness of this conclusion. It exhibited at first a pale or dull red color, became gradually brighter, till it attained a silvery whiteness, and then exploded with brilliant coruscations, and, as it moved on, repeated these explosions several times. This would be accounted for on the supposition, that a body originally cold was, on entering the atmosphere, heated by the friction caused by its rapid motion, at first becoming faintly luminous, and then growing brighter, until its surface became so intensely heated as to generate gases, and thus cause explosions, throwing off fragments from its surface, and, as its successive coats became heated in like manner, repeating its explosions till it passed out of the earth's atmosphere, or was finally shivered to pieces.

When this meteor was first visible, it must have already passed for some distance through the earth's rarefied atmosphere, and have dipped deeply into it. It would, therefore, seem to be almost certain that the atmosphere must extend more than one hundred miles from the earth's surface, and probably much farther.

I will now advert briefly to the size of the meteor. On this point the evidence is not so conclusive. Persons are liable to be deceived by

the appearance of bright lights with respect to their real size. Mr. Moore says, when first seen, it appeared to be only six inches in diameter, but, when at the nearest point to him, he estimated it to appear thirty feet in diameter, and of some hundreds of yards in length. He lays much stress on the *solid* appearance of its light, it being well defined and without any irregular edges. Others say it looked like a railroad train, while some say it was as large as a barrel. Mr. Ingraham and others, at Holly Springs, say it was, in size, fully equal to the disk of the moon when full. A similar estimate was made by observers at Antioch College, Ohio, and at Pittsburg, Pennsylvania. If a body, at a distance of three hundred miles, should appear as large as the moon, it ought to be nearly three miles in diameter. As this meteor was throwing off luminous gases, it would, of course, appear larger than it really was, especially after it became intensely heated; but when its color was dimmer than that of the moon, the deception ought not to be so considerable. It is also true that the observers generally say its brightness was greater after it had passed and had receded from them.

The amount of light it gave also indicates its great size. Major Francis Logan, of Habersham, Georgia, and R. N. McEwen, then at Athens, Tennessee, nearly under its line of movement, represent it as being larger than the moon, white, "like melted silver," and throwing a light upon the earth "like that of the sun." And yet its brightness is described in terms almost as strong by persons at Holly Springs, more than three hundred miles distant. At Nashville and other points, they speak of this light as sufficient to enable one to pick up a pin. Could any but a large body cast such a light over so great an extent of country?

But the most perplexing part of the subject is the rapid transmission of sound from this meteor. Colonel William M. McDowell (who was then, and for several years previous, making observations for the Smithsonian Institution, at Asheville) stated to me the next morning, that, being on horseback and looking downward to the earth, which was already bright in the light of the full moon, he heard a rushing or hissing sound, and, on looking up, he observed the meteor in the southeast, presenting at first a dull-red color, and rapidly becoming brighter. Several other gentlemen in Asheville also declared that they heard such a sound distinctly, and at first supposed the meteor to be a rocket sent up. There were, however, in fact, no rockets at Asheville, nor was there any expectation that they were to be discharged.

Dr. J. F. E. Hardy, (who has since the war been making the observations for the use of the Smithsonian Institution) was then in the piazza of Mr. Cheesboro's house, two miles southeast of Asheville, and declares that he not only saw, but heard the meteor while it was in sight. Being somewhat deaf, he asked the members of the family if they heard it, and had an affirmative reply from all present. Colonel John A. Fagg, who had on that day been elected a member of the Legislature for Madison county, and who was then in the town of Marshall, twenty-one miles distant, in a northwestardly course, declared to me that he heard the hissing sound plainly while it was passing. Mr. J. H. Ingraham, writing from Holly Springs, says its passage was accompanied by a hissing sound, if the testimony of a great number of persons was to be relied on. Mr. W. C. Knapp, of the same place, says it was accompanied

by a hissing noise. Mr. A. H. Preston, who writes from Antioch College, Yellow Springs, Ohio, says a faint, hissing sound was distinctly heard.

Major Francis Logan, of Habersham, Georgia, says that persons there generally spoke of hearing it during its passage in the same manner. Mr. R. N. McEwen, who was then at Athens, Tennessee, says that he and his wife, being in the piazza of his house, were both confident that they heard a hissing sound as it passed over them. Seeing its brilliant explosion after it had passed toward the northwest, thinking it only two or three miles distant, they remained standing for some time in expectation of hearing a report, but not until after they had gone into the house, and, as he supposed, an interval of fifteen minutes had elapsed, was there heard a prolonged sound, as the report of a large cannon.

A gentleman who lived near Asheville, stated to me the day after the meteor had appeared, that, on seeing the explosion, he paused in the road for a little while, in expectation of hearing a report, but that he walked afterward nearly around his farm, and, after an interval, he thought of at least fifteen minutes, had elapsed, a heavy sound came from the direction of the meteor.

We have thus the statement of a number of intelligent and trustworthy persons, who were separated hundreds of miles from each other, all affirming the same fact. But as sound is ordinarily estimated to travel but little more than eleven hundred feet in a second, the meteor might be supposed to have been out of the sight of those nearest to it, for at least eight or ten minutes, before the sound created by its passage could have been heard. Were they all mistaken in supposing that they heard it while it was in sight?

Is the ear much more likely to be deceived than the eye? Are not persons generally as confident that they hear the thunder as that they see the lightning? Why should all these persons imagine that they heard such a sound, when it is not usual for meteors, when so seen, to be also heard? Two of them did expect to hear the explosion, and waited for it without imagining that they heard it at the time when they expected it, and only heard it long after they had ceased to look for it.

It is but natural that we should hesitate to believe as true what is at variance with general experience and with what seems established in science. Solid bodies had often been seen to come down from the higher regions of the atmosphere, before scientific men accepted the fall of meteorites as an established fact. But the circumstances under which these sounds were manifested were peculiar, and are not necessarily to be assumed as contradicting our general experience. In this instance, a large body was moving with very *great rapidity* through the atmosphere. We can only approximate in our estimate the speed with which this meteor moved. While some observers regarded it as being from six to ten seconds in sight, the longest estimate of its visibility is that of Mr. Ingraham, viz., twelve to fifteen seconds. He, and others with him at Holly Springs, saw it in the southeast, and until it had passed to the northwest. One writer says it disappeared west of north. It must, therefore, have been seen to move through a space to be measured by more than a hundred degrees, and it might have been much more. As the meteor, considering its elevation above a place on the earth's surface at least three hundred miles off, was at the nearest point farther from the

observers than that distance, if it moved through one hundred degrees of space in a right line nearly, it must have been in view while it was passing through a distance of six or eight hundred miles. Such a calculation would make its speed from forty to sixty miles per second, depending of course upon the accuracy of the estimate of the time. It could not have been describing a curve around Holly Springs, because it was at the same time seen by the observers in Ohio, Pittsburg, Pennsylvania, and Caroline county, Virginia, in its course to the northwest. Mr. Moore, who was at Raleigh, on the opposite side of the meteor's track, and probably about the same distance from it, saw it pass through forty-eight degrees, by measurement, in eight seconds, as he estimated the time it was in view. Its speed, calculated from these data, would approximate fifty miles in a second. As it appeared to be moving in the part of its course seen by me, it seemed certainly not less rapid.

Might not a body moving with this velocity generate a rapid transmission of sound? If we assume that there is some highly elastic medium through which light and electricity, for example, are propagated, might not this body, by the suddenness of the impulse it gave, propagate a sound to a great distance with such speed?

But it may be said that lightning moves with very great velocity, and that yet the noise of the thunder travels with only the speed of other sounds. It is true that, when the flash is near, the thunder seems louder to the ear than any other sound, and yet it is propagated to the distance of only twelve or fifteen miles. On the other hand, though, when one is near a large cannon, its report does not seem so loud as thunder, yet it can be heard to a much greater distance. When, during the late war, I was at Charleston or Savannah, I could, in favorable states of the atmosphere, distinctly hear the guns at the other place, though the two cities are understood to be one hundred miles apart. The cannonades at Charleston were often heard in the upper portions of South Carolina, while those at Richmond, Virginia, were sometimes heard west of Greensboro, in North Carolina—in each case at a distance of nearly one hundred and fifty miles. Why is it, then, that though thunder seems louder than the reports of artillery, it cannot be heard so far?

The explanation does not seem to be difficult. If a pistol be discharged into the water, the bullet breaks the surface violently, and causes the water to be sprinkled for a short distance; but the ripple produced on the surface extends but a few feet around. When, however, the steam-frigate Minnesota was launched at the Washington Navy-Yard, though she glided so gently into the water that she did not break the surface apparently, yet she caused a wave that extended itself across the harbor, and rose several feet on the shore opposite, wetting many persons who were there to see the launch. As an illustration on a still larger scale, I refer to the fact that earthquakes in Japan cause waves which are propagated across the Pacific Ocean to the shores of California. A large body, though moving slowly, creates a wave which extends to a great distance, while a violent impulse of a small one produces no such result.

From the smallness of the furrow produced by lightning through the bodies of trees struck by it, and from its passing so readily along a small rod, it would seem that the volume of air diplaced by it is small, and

analogous to the effect caused by the pistol-shot on the water; while the explosion of gunpowder, when a large cannon is discharged, produces a greater displacement of the atmosphere, causing a large wave of sound, which is extended to a great distance, as the wave in the water caused by the Minnesota was perceptible for miles.

But, when the ship was launched, though a larger portion of her bulk was in the air than in the water, yet she did not make a corresponding wave in the air which could be felt across the harbor. Even a railroad train, moving much faster than did the Minnesota, does not send in advance of it a great wave in the air. But, in fact, air is capable of receiving such an impulse. When a large gun is discharged, such motion is given to the air that houses are shaken and window glass broken. As air, therefore, is much rarer and more elastic than water, it seems that it requires a much more sudden impulse to create an extended wave in it than in water. If, then, it may be regarded as a general law that the greater the rarity and elasticity of a medium, the more sudden and violent must be a force sufficient to produce a movement that will be extensive, then it might well be that the expansion of gases generated by the explosion of gunpowder would be too slow to affect a medium as much rarer than common air as that air is rarer than water. But a much more sudden and violent movement might possibly cause an impulse in such a medium that could be perceptible at a great distance.

A cannon-ball, propelled with the ordinary charge, is barely driven a mile in five seconds. If we take forty miles per second as the velocity of this meteor, it moved with a speed two hundred times greater than that of the cannon-shot. A spherical cast-iron shot, one foot in diameter, weighs about two hundred and twenty-five pounds. If the meteor be assumed to have had a diameter of one mile, its surface, and the consequent volume of atmosphere displaced, would have been more than twenty-five million times greater than that of the cannon-ball. And, as its solid contents were in bulk more than five thousand times greater than this number indicates, the resistance of the atmosphere would be trifling in comparison with that to the cannon-shot. Even if the diameter of the meteor were but one hundred feet, its surface would have been ten thousand times greater, and its bulk one million times larger. Such a body, moving with a speed two hundred times faster, would present a condition of facts with which we are not at all familiar on the surface of the earth.

The hissing sound described reminds one somewhat of sounds occasionally heard when electricity is passing along imperfect or non-conducting substances.

If electricity be coextensive with the atmosphere, this meteor might have produced great accumulations and disturbances in it, and caused vibrations to great distances. That these should be very rapid would seem to be probable from the fact that the greater the rarity of the several gases the higher the speed with which sound is propagated through them.

Mr. McEwen, at Athens, heard the hissing sound while the meteor was in sight; but fifteen minutes elapsed before the report from the explosion reached him. The explosion was doubtless caused by the intense heat at the surface of the meteor, which generated gases, the

expansion of which threw off the outer coating of the body in fragments. These gases ought to be expected to expand with a force and speed equal to those caused by the explosion of gunpowder. This has not, I think, been estimated as equalling one mile per second.

Such a movement would, therefore, be slow, compared with the velocity of the meteor itself. Hence, while the hissing sound caused by the latter might move with the rapidity of electricity, that caused by the explosion would travel only with the speed of such sounds as we are familiar with, and would therefore reach a person one hundred and eighty miles distant in fifteen minutes.

HUXLEY, DARWIN AND TYNDALL;

OR, THE THEORY OF EVOLUTION.

By Hon. T. L. CLINGMAN.

[Published in the WASHINGTON CHRONICLE, January 31st, 1875.]

So much attention has of late been given to the views of such men of science as Darwin, Huxley, and others, with respect to the origin of life and the production and development of animal and vegetable species, that I am tempted to present to you a paper on this subject. Without claiming more scientific knowledge than any gentleman who reads and reflects may possess, I propose to offer objections to the views of that school of philosophers.

To avoid prolixity I shall abstain from the use of such scientific terms as would require explanation to render them intelligible to many readers, and endeavor simply to state in plain language the propositions of that school, so as to present their views fairly and justly.

Their doctrine may be stated in general terms as embodying the hypothesis that the various species of animals now living were not called into existence by special acts of a creative power, but owe their being and present condition to a slow and gradual development from earlier and inferior animals. It is maintained that all existing species came either from one, or at most a few inferior creatures called monads or primordial forms, and that, by a succession of evolutions or changes in them, all animals exist as we now perceive them. In this mode man himself is supposed to have come from a lower animal, probably of the ape species.

I regard this hypothesis as improbable in itself, without a single fact to support it, and without one plausible argument in its favor.

Let us first consider the theory of "natural selection" or the "survival of the fittest," which is assumed to have been the chief instrumentality that has effected the successive changes that have brought

an animal, originally inferior to the oyster, up to man as he now appears.

By natural selection we are to understand a theory of this kind. The fact is stated that young animals at their birth differ in their constitutions, some of them being larger and stronger than others. During their struggles for existence those having most bodily vigor will survive, while the feeble will succumb to the difficulties with which they are surrounded. As the more vigorous only survive, they transmit to their offspring healthy and strong constitutions. This process being repeated from time to time will not only make the whole species more vigorous than it originally was, but it will acquire new and superior qualities, and will finally seem to have become a different and higher race of animals. This process will be continued, each time producing, by successive evolutions, superior beings, until finally man is formed, his last progenitor having most probably been a species of ape like the ourang-outang or gorilla. The first part of this statement, viz: that among animals those having at birth the most vigorous constitutions survive while the feeble perish, has not the merit of novelty. The fact did not escape the observation of even the most ignorant savages, among whom it is sometimes the custom to expose to death infants so feeble that they would not probably survive and become vigorous adults. Though this practice does not prevail among civilized people, yet one may hear a nurse say that such a new-born infant is so feeble that it will be very difficult "to raise it." Farmers understand this so well that when, in a litter of young pigs, one under size is seen, it is assumed that he will not be able to contend with the others for his food, and it is decided that he must be put in a pen and fed on slops, so that he may, in due time, be killed as a shoat.

All stock raisers recognize this principle, and select their sows and brood mares of good size and fine developments. Unquestionably larger and better animals are thus obtained, but while their size is increased, the improvement does not extend beyond certain limits, which seem invariable for each species. Though the hog can be greatly increased in size, he never becomes as large as the bullock or horse, nor can the horse be gotten up to the bulk of the elephant. There is in fact no evidence of any permanent addition even to the size of the species, much less of any change in its organization. When the stimulating cause ceases the animal seems to revert to its former condition.

Though the Arab and Tartar wild horses have, by good feeding in Europe, been greatly increased in size, yet when left to take care of themselves on the plains of Mexico or South America, they become the smaller mustang, and on the banks of Eastern North Carolina dwindle into the little "marsh pony." In like manner the hog, left to run wild in the mountain forests, is reduced to a small, hardy animal. Even with respect to the human race, which is not subject to changes of food, tall parents often have children shorter than themselves, nor have we any evidence that the process of "evolution or natural selection" has ever produced human beings an hundred or even twenty feet high, as it should have done upon this hypothesis. It seems,

rather, that the changes of which each species is capable, are confined within certain limits easily observed, within which these species seem to vibrate like the pendulum of a clock.

But, even if the fact were otherwise, it would not support the theory of the evolutionists, unless it could also be shown that animals would not only increase in size, but that they could likewise be developed into some other species. It is necessary that the sow should not only become very large, but that she should also produce a cow or a lion, or the mare give birth to a dromedary or an elephant, to lend support to their views.

Great stress is laid on the fact, however, that surrounding conditions do, in certain cases, diminish or influence the development of some animals. It is stated that if a tadpole be kept in cold water he will, for a long period, perhaps an indefinite one, remain simply a tadpole, and not be developed into a frog. This fact, however, is, by no means, a singular one. Every old woman, who raises poultry, knows that if an egg be kept cold it will not hatch, or, to use a scientific phrase, be developed into a chicken. In like manner, all farmers know that if a cold spell of weather comes on immediately after their corn or cotton has been planted, it does not come up. While this result may be looked for in all cases, there is another analogy between them which is even more unfortunate for the evolutionist. When warm weather causes the seed to germinate, the plant will invariably follow in its form and qualities that from which the seed came. In like manner whenever the egg is hatched the product is a chicken, and never a goose or a rabbit; so, however long the tadpole may be detained in cold water, when he does develop he becomes always a frog. What the advocate of evolution by natural selection needs to show is, that under these conditions the tadpole should become a fish, a lizard, or a mouse. If he could point to such a result as this he would then have one fact to support his hypothesis.

It is said, however, that if we go back to the earliest germs of life, it is difficult, if not impossible, to distinguish those in the eggs of certain birds from such as are found in the eggs of a serpent. But the essential fact remains that, however much alike in appearance they may be, each germ, when developed, invariably produces an animal like that from which it came. This fact makes the case still stronger against the evolutionist; for if it were true that these germs of different animals were in material, form and quality in all respects precisely alike, the great fact that they invariably produce different animals, tends to prove that the form of any particular species is not determined by matter alone, but that the mysterious substance or quality which is designated as vitality, is something independent of the mere identity and form of matter.

When such objections are presented the evolutionists insist that mere negative evidence is insufficient and ought not to be relied on. Though it may be true that negative evidence is inconclusive in some cases, yet in other instances it is as satisfactory and convincing as any positive evidence can be. Suppose an individual were to affirm that a bar of iron, if made red hot, would be converted into gold, I might reply

that I had seen iron frequently thus heated without its being so changed; that, in fact, all iron was thus heated while being manufactured, and that it never had been in a single instance converted into gold. Is there a man acquainted with metals who would not be just as thoroughly satisfied by such negative evidence that the iron would not become gold that as it would not by being thus heated cease to be acted on by the force of gravity, and remain if left without support stationary in the air? In like manner does any one doubt but that the offspring of a sow would be pigs, and not puppies or lambs?

But the evolutionist replies that though these things appear to be true, yet we cannot know what an indefinite period of time might have accomplished; that we cannot decide what millions of years or of ages might effect by means of the "plastic forces of nature." To this surmise, however, the answer is that physical science, that science which deals with material things, proposes to rest on observed facts, and not on mere suppositions, like those of the school-men of the middle ages. Its professors are often designated as positive philosophers, and pride themselves on following facts to whatever conclusions they may lead. How, then, can a hypothesis be maintained which not only has no fact to support it, but to which every known fact bearing on the case is directly hostile? If we may assume a thing to be true merely because it cannot be proved that at some time in the past, or at some place in the world, it might not have existed, then why doubt the reality of Sinbad's voyages, or the wonders of Aladdin's lamp?

It is urged, however, that at least different species may have originated in a common ancestor, and gradually diverged like the branches of a tree. The case is referred to in which from the same stock pigeons of different colors and forms have been produced. Unfortunately, however, for the evolutionist, the birds thus produced are invariably pigeons, and never hawks, ducks, or animals of any other species. If in one case it could be shown, for example, that a sweet-potato when planted had given rise to a sweet-potato-vine from its centre, while from its north end a young oak had sprouted, and from its south a pumpkin-vine had shot out, then there would be a striking fact for the evolutionist. It may be said that it is unreasonable to expect so great a change at a single bound, and that a long period should be imagined to effect such a result, but in the absence of all evidence, upon what basis can such an opinion rest?

These changes are supposed, by the advocates of the "natural selection" hypothesis, to have been produced among animals by their having been placed in situations sometimes in which they felt the want of the particular change. When suffering from cold, one animal would feel the want of hair, and to gratify its longings hair would grow on it. Another, to enable it to reach the leaves above it, by continually stretching its neck upward, and by wishing for it to be longer, would have it gradually extended, and in time become a giraffe, instead of remaining a deer or a camel. The ape, though he had never seen a man, as no man had yet existed, wished, nevertheless, to become one, and, by wishing very energetically, had his fore-

paws converted into hands, his hinder ones changed into the flat feet of a man, his brain enlarged to three times its former size, and his spine made erect.

One of the most earnest and ingenious of the advocates of the evolution theory, however, Mr. Alfred Russell Wallace, finds a serious stumbling block in his way when he considers the changes which the ape underwent while being converted into a man. His hind foot lost its prehensile faculty by becoming like that of a man, and was, therefore, much less useful to him in climbing among the trees, while he did not for a long time at least know how to turn his hands to a good account. The great difficulty, however, which Mr. Wallace encountered was that he could not understand why the ape wished to get rid of the hair on his back when he became a man. All men are destitute of hair along the spine, while savages especially seem to desire to have it on their backs. The ape had it most abundantly on his back, and it would seem ought to have greatly rejoiced in it as a protection against the rain. Most animals, as Mr. Wallace observes, though they have little hair on their bellies, possess it in abundance on their backs, while along the spine especially it is thickest, sometimes taking the form of bristles. Mr. Wallace further states that savages seem especially to suffer from cold on their backs, and, therefore, when they can obtain even a small piece of skin they invariably place it over their shoulders. Some of them, as the Fuegians, are even smart enough to have the skin so tied on that they are able to shift it from side to side, according to the direction of the wind, to protect them from it. As, therefore, the hair was manifestly advantageous to the ape in his original condition, and was equally so to him after he became a savage, why in the world did he wish to get rid of it? And as savages feel the want of it so much, why did not "natural selection" give it back to them again? After casting about for some satisfactory answer, with little success, Mr. Wallace fears it will become necessary to seek for some other principle in addition to "natural selection." Ludicrous as this whole passage appears, one is not less amused with that narrowness of vision, which prevents him from seeing obstacles not less formidable to every part of his hypothesis.

It is also true, however, that while he is not staggered at all by the proposition that the ape, by wishing it, could have his brain expanded from a capacity of thirty-four inches at the utmost up to a bulk of more than a hundred inches, or above three times its original size, yet he cannot understand why the ape should have wished for a moral sense. He cannot perceive any reason why the animal should have desired the possession of conscientious feelings or a sense of right and wrong. In fact, such emotions, instead of being of advantage, would seem rather to have been an incumbrance to him while engaged in such predatory enterprises as our modern apes appear to take delight in.

To this view also the objection exists that no organic change seems to have been produced in any animal by its feeling a desire for such a change. As yet it has not been stated that any one of the maimed soldiers that one meets has had his limb restored to him, though from their resorting to artificial helps there is little doubt but that

they desire such restoration. If the "plastic forces of nature" would now supply teeth as they formerly did to the animals wishing for them, would there be as many dentists as the signs on the doors seem to indicate?

If it should be urged that having once furnished the organs to the individuals, the powers of "natural selection" had been exhausted in their case, we may well ask, How is it that no one of the short men we meet, who often manifest a desire to be tall, has, even by the most vehement wishing, been able to add a cubit or a single inch to his stature? If, in truth, the mind of animal or man were able simply by its action to change material things to the extent which the theories of the evolutionists assume, then its potency over matter would be immensely greater than its most enthusiastic advocates have ever claimed for it.

Again, the facts presented by geological science have been appealed to as lending support to the views of the evolutionists. It is said that the animals which existed in the early geological periods were inferior to those which succeeded them in later ages, and that an upward progress has been steady and uniform, from the shell-fish up to quadrupeds and men. Though this fact has been disputed in certain respects, yet I regard it as in the main true, and for the purpose of the present argument will accept it as absolutely true. In other words, after the oyster the vertebrated fish, like the salmon, came, then the crocodile and other reptiles, and in succession lions, horses and similar quadrupeds, and finally man. Does such a succession, even if it were mathematically true, afford a respectable argument in support of the view that each of these classes came from the preceding one, or was a modification of it by the process of evolution? Admit that this succession was invariably upward, does its invariability establish the doctrine of "natural selection?"

Let us suppose that the man in the moon has come down to earth from a laudable desire to learn how matters are managed here. Of course he would be invited to dine with the President. The first dish will be soup, then fish, afterwards roast beef and other meats, the dinner ending with jellies, ice cream and coffee. On the next day he dines with the Secretary of State, and is surprised to find the same succession of dishes. Each member of the Cabinet treats him precisely in the same manner, and so do such of the private citizens as he dines with. Being of a scientific turn of mind, he philosophizes, and is soon convinced that he has divined the true theory of these phenomena. The succession of dishes is invariably the same, and, therefore, it is clear that each dish must have been a modification of the preceding one. In the laboratory of the cook a certain primordial form of matter existed, and through some evolution which he did not precisely understand, it at first appeared as soup. By continuing the operation this substance became partially solidified and took the form of salmon. The action being continued by the aid of time, it was so hardened as to become roast beef. The operation longer persevered in, broke up the consistency of the material somewhat, so that it appeared as jelly and ice cream, while certain watery portions, which could not be even par-

tially solidified, remained as coffee. The invariability of the succession left no doubt on his mind as to the soundness of his theory. Had he not in truth all in this form of evidence that geology gives to the evolutionist? On stating his hypothesis, however, he was told that his theory was so plausible that it was not singular that he should have adopted it, but that he was mistaken. That the dinner invariably began with soup and ended with coffee was merely due to the fact that the person who arranged the dinner thought that such a succession of dishes was better suited to the tastes, appetites and constitutions of men than any other arrangement. Does geology furnish to the advocate of "natural selection" a stronger argument than this lunar philosopher had? If at one time the earth, from its warmer condition, was enveloped in an immense mass of cloudy vapors, so that the sunlight was excluded, the creative power might be supposed capable of perceiving that it was in its condition well suited to the existence of shell-fish in its waters. After further cooling its vapors subsided, and permitted the sunlight to penetrate its ocean, and vertebrates, furnished with eyes, could be accommodated; and as the land emerged its marshy surface was well-fitted for the comfortable existence of reptiles. Further hardening rendered it a suitable habitation for quadrupeds, that could be well fed on its luxuriant grasses and other vegetation. At length it acquired a condition fitting it for the growth of the cereals, and man was called into being. Such a supposition as this would not require in the creative power a higher degree of intelligence than the farmer displays, when, after having newly drained a piece of marsh land, seeing it still wet, he uses it for a meadow, and after it has been thoroughly dried cultivates it in wheat.

There has recently been much discussion in relation to the discovery of the "basis of life," or that point where mere matter first assumes the character of vitality. Microscopic examinations show that there are certain minute particles of matter designated as ova, cells or protoplasms, which manifest a potentiality to be developed into plants and animals. They are found to consist of the four elements: oxygen, carbon, nitrogen, and hydrogen; but they become food for plants only in their combinations of carbonic acid, water, and ammonia. In this form they can sustain the growth of the "protoplasms," which constitute plants, while animals can only assimilate them secondarily from plants. These protoplasms seem to be so near to mere matter that Professor Tyndall said in his address at Belfast, that he "passed over" the interval which separated these protoplasms from matter itself. In other words, he seems to regard matter alone as sufficient to constitute vitality in plants and animals, excluding the idea that there is any such thing as life other than as a modification of matter.

But do the alleged discoveries sustain this view? It would be but a superficial view if we were to assume that the knowledge of the fact that the oak came from an acorn, and a fowl from an egg, explained the origin of vegetable or animal life. How it was that the acorn had a potentiality to germinate into a tree, or the egg to be developed into a fowl, would remain still none the less a mystery. The chemist might

place the egg in an exhausted receiver, hermetically seal it, and by applying a moderate degree of heat he could deprive it of its vitality or potentiality to become a fowl. After this had been done, he would have under his control all the material elements of the egg with its numerous dead protoplasms, but no skill of his could restore its vitality. Does not this show that vitality is something more than mere matter, a something to be added to matter before it can possess the potentiality to manifest itself as a living organization? So is it with the protoplasms. Professor Tyndall says he passes over the chasm which separates his protoplasms from matter. So can the protoplasms also, but when they have thus passed they have crossed a chasm over which they return not again. No man of science can again restore their vitality. Their condition is then as hopeless as would be that of the Professor himself when he once passed from the living to dead matter.

Is it not clear, then, that the discovery of protoplasms has not enabled us to understand the "basis of life" any better than men did centuries ago? How they become living organizations is just as much a mystery as the potentiality of the acorn or the egg to produce vegetable or animal beings.

Again, the fact that the microscope does not enable the man of science to distinguish the protoplasms of one animal from those of another, does not tend to establish the identity of different species. It was discovered long ago that animals and vegetables, with slight additions, were constituted of these four elements. But no one ever assumed that because chemical analysis showed that the flesh of men and dogs were composed of these same elements it thus proves that men and dogs are identical in species, or must have had a common origin. The very fact the protoplasms of different animals cannot be distinguished from each other, accompanied by the other fact that the protoplasm of each animal invariably produced that animal, and not any other, indicates that life, which determines species, is something entirely different from mere matter.

The question may be asked, then, "Why is it that such views have attracted of late so much attention, and been adopted by a number of persons?" It must be remembered that the minds of many men of science in the pursuit of certain inquiries, run in narrow channels, and, like the microscopes they use, make small objects appear very large; and thus they attach undue importance to some new discovery. The mass of readers are influenced by the authority of great names, and are also fond of a novelty. Their minds are confused by the use of terms not well understood. "Natural selection," the "survival of the fittest," "evolution," "proptolasms," "monads," "protein," "the physical basis of life," "correllation of growth," "correllation of vital and physical forces," and similar terms disturb their minds, and induce them to believe that there must be something deep and mysterious in such theories, just as the traveler who comes to a stream so muddy that he cannot see the bottom, is easily persuaded that it is of indefinite depth. Such persons, seeing that they have often been surprised by great discoveries in science, become credulous, and ready to adopt new theories, however improbable.

Mr. Quirk, because Tittlebat Titmouse had, from being a beggar, suddenly become the owner of ten thousand a year, was induced to believe that the red, green, blue, and purple colors of his hair, produced by his brisk application of the various hair-dyes, with which he so suddenly surprised his acquaintances, might have been caused by the change of his pecuniary condition.

The several works lately published on these subjects contain much valuable scientific information, and, if read as we do "Gulliver's Travels" will furnish knowledge as well as amusement. Science, in her sphere, gives us an amount of knowledge that cannot be overestimated, but it has utterly failed to explain the origin of life, the connection of mind and matter, or the manner in which they act on each other.

WATER SPOUTS.

LECTURE BEFORE THE PHILOSOPHICAL SOCIETY OF WASHINGTON, JANUARY, 1877.

By Hon. T. L. CLINGMAN.

On the 15th day of June, 1876, there fell in the western part of North Carolina from forty to sixty water spouts as they are popularly termed. The manner of their fall and the facts connected with it are of such a character, that I think the phenomena ought to be brought to the attention of the scientific world. I will, therefore, so state them as probably to make them fairly understood by such persons as take an interest in the subject:

The area of territory on which they fell is embraced in the southern portions of the counties of Macon and Jackson, in North Carolina, and the adjoining parts of South Carolina and Georgia. The greater portion of this territory consists of an elevated plateau of an altitude of more than three thousand feet above the level of the sea. It is traversed irregularly by several ridges of mountains of considerable height, and has occasionally to be seen detached peaks, the highest of which rises above four thousand (4,000) feet. One of the ledges is the Blue Ridge, which divides the waters running into the Atlantic from those flowing into the Mississippi. The course of this chain along the plateau is very nearly east and west.

The distance from the spot where the most westerly of the water spouts fell, to that of the most easterly of them, near the border of Transylvania county, cannot be less than thirty miles in a direct line, while from the position of the most northerly to that of the most southerly, the distance must be fully twenty miles. In other words, the water spouts fell irregularly over an area of thirty miles in length by twenty miles in breadth.

On the day of this fall there was rain over a large area, embracing the western portion of North Carolina, and territory in the adjoining States. There was in some localities thunder and lightning, but not an unusual amount, nor was it remarkable for wind. In fact, in the immediate vicinity of some of the water falls, it was described as being a still, wet day.

I will now describe, particularly, one of those "spouts" or water falls. Mr. Horatio Conley lives about twelve miles south, and rather east of the town of Franklin. in Macon county. His house stands on the west side of the Tessantee, a stream of several yards in width, and probably fifty yards from the stream. In the afternoon of this day, June 15th, 1876, during the rain, which had been falling steadily for the greater part of the day, he was surprised to see the stream suddenly rise much higher than he had ever seen it at any previous time. This rise was in part produced by the falling, two miles above him, of two smaller water spouts of which he then knew nothing. Though the banks of the stream were high, yet the water rose above them and extended into his yard, and alarmed him for the safety of his house. The stream, however, rapidly subsided into its channel, but was still much swollen. On the opposite side of the creek, and immediately in front of his house, there is a ravine along which there flows a little branch that comes down at right angles to the Tessantee. While he and his wife were in the piazza of their house, next to the creek, their attention was arrested by a remarkable appearance up this ravine distant perhaps one hundred and fifty yards from them. They saw a large mass of water and timber, heavy trees floating on the top, which appeared ten or fifteen feet high, moving rapidly towards them, as if it might sweep directly across the Tessantee and overwhelm them. Fortunately, however, sixty or seventy yards beyond the creek the ground became comparatively level, and the water expanded itself, became thus shallower, and leaving many of the trees strewn for a hundred yards along the ground, entered the creek with a moderate current. The Tessantee, however, was again so full as to overflow its banks, and large trees were carried down it, and left at intervals for a mile or more. This sudden rise was caused by the water spout which I am now about to describe. It appeared at Mr. Conley's at half-after three o'clock in the afternoon.

At a distance of two and a half miles to the eastward of Mr. Conley's there is a ridge known as the Fishhawk Mountain. It extends in a direction nearly north and south, and is probably more than thirty-five hundred feet in altitude above the sea, but it can scarcely exceed four thousand feet. Within two or three hundred feet of the crest of its ridge two of these water spouts fell, but on opposite sides. I will describe that which struck on its western side, and flowed down towards Mr. Conley's house. After ascending with considerable difficulty, chiefly on horseback, but making the upper part of the journey on foot, I reached the spot where it fell. The ground was quite steep, the surface ascending at the rate of twenty five degrees, probably. There was a circular opening in the ground about twelve or fifteen feet deep in the centre. It had the figure of almost an exact semi-circle

on the upper side, and then extended down the mountain, presenting the figure caused by two parallel lines from each of its sides. Across the circle it was seventy-five feet wide, and for some distance down it maintained about the same width. In the centre of the circle, for forty or fifty feet in extent, the rock at the bottom was naked and clean, but around the outer edges of the rim or opening, for ten or fifteen feet, there was much earth lying. This lay five or six feet below the solid ground around it.

The solid surface around the opening presented a very regular circular form, from which had been torn with great force the loose earth below. The roots had been all broken squarely off, and the earth removed so that the descent was perpendicular for several feet down to the loose earth. The whole depression looked as though it might have been produced by the sudden fall, with great force, of a column of water forty or fifty feet in diameter, which not only cut its way down to the solid rock, but also tore loose a mass of surrounding earth on which it did not fall directly. That the column of water was not as large as the entire opening was evident from another circumstance. At the upper part of the opening lay a log somewhat decayed and scorched by previous fires. The lower end of this log extended several feet over the opening, showing that the water had not struck it, but had merely torn away the earth under it. The upper part of the opening seemed to form almost a perfect circle, descending perpendicularly like a wall for several feet in depth.

Outside of this opening there seemed to have been no disturbance whatever on the surface of the ground. On the contrary, the old leaves of the previous year lay within two or three inches of the break, and little fragments of decaying limbs, half burnt, of only the weight of an ounce or two were undisturbed just at the edges of the break. But inside of the depression, and all along its channel, everything down to the solid rock below had been swept away by the torrent in its course. Hundreds of trees, many of them three feet in diameter and an hundred feet in height, were carried along. So were all the loose rocks, some of them boulders of several tons in weight. There was a clean, broad furrow for more than two miles down to Mr. Conley's.

Not far from where the spout fell, the ground assumed the form of a narrow ravine, with steep sides, along which the current took its way. Its course was nearly a direct one, but there were some slight bends which caused, in places, trees to be left where they chanced to be thrown up on one of the banks. Most of the trees had been torn up by the roots, but occasionally a solid oak, three feet in diameter, was seen to have been broken squarely off. All their limbs were gone, and not a tree did I see that had not been stripped completely of its bark in in its rough journey downward. The current, as it descended, must have lost much of its velocity by reason of the constant obstacles it encountered from the trees and rocks, and from the gradually diminishing steepness of its path. It all along, however, retained sufficient momentum to carry not only the trees, but all detached boulders, and left the solid rocky strata very clean behind it.

I sought to ascertain, as nearly as possible, what was the probable mass or volume of water present. This could be approximated within reasonable limits. At the distance of one hundred and fifty yards below the place of the fall, there stood on either side of the current two trees, which had, from their being protected somewhat by solid rock, been left standing, the main force of the current having passed between them. These two were seventy-five feet apart. On the northern one the line of the muddy water was visible to the height of twenty feet, while on the southern one it rose to sixteen feet. A tree on the north side, scarcely ten feet in the rear of the first named tree, was marked only ten feet high, while a fourth, on the south side, seven or eight feet in the rear only of the nearer one to the current, was untouched by the water. In the middle of the current the ground was laid bare to the depth of at least ten feet below the surface on which the trees stood, so that the depth of the current, from the highest water-mark down to the bottom of the channel, was as much as thirty feet. But from the fact that the water had been much higher on the two trees, nearest the centre, than it was on those a little in the rear; and these first named trees were seventy-five feet apart, it was evident that the water in the centre had been still higher, probably high enough to increase the depth in the centre to forty feet or more. In other words, the stream there presented the appearance of a somewhat flattened, cylindrical mass. This was due to the fact that in addition to the immense impulse it had received from its fall against the slanting ground, from which it had bounded as it shot down the mountain, it was at the same time descending not less than twenty or thirty degrees along the steep ground. It thus moved forward so rapidly that it had not time to expand and become level. Fifty yards lower down, or two hundred yards from the spot of the fall, this current was ninety feet wide and apparently about thirty feet deep.

Two miles lower down, where it was first noticed by Mr. Conley and his wife, and near the termination of the ravine, where it reached the more expanded and level ground, it was fully sixty yards wide, and in the centre, where I could see the driftwood left on a solid, upright rock, it was ten or twelve feet deep. I estimated that its whole volume then would be equal to a current forty yards wide and six feet deep, all the way across. In other words, a plane, cutting the current perpendicularly, and at right angles, would show a surface of eighty square yards.

To determine the whole mass of the water, it was necessary to know how far up the ravine the current extended. Mr. Conley said he thought the current required fifteen minutes to run by. His wife said it did not seem so long to her. She thought it might have been running at its full height as long a time as it would have been necessary to enable her to walk a couple of hundred yards at her usual rate of walking, probably three or four minutes. The descent of the ground at the termination of the ravine, was perhaps as much as two hundred feet to the mile, and certainly not less than one hundred feet. The French Broad river, in Buncombe, has an average fall of eighteen feet to the mile for some distance. I have observed that when there was a

freshet, the drift wood, at a portion of the stream less rapid than this average, would be carried along at the speed of four or five miles to the hour. As the descent of the ground, at the termination of the ravine opposite Conley's, was more than ten times as great, it is not probable that the current of rushing water moved less than ten miles per hour, or as fast as the speed of a cantering horse. This would be equal to one mile in six minutes. In a single minute, therefore, the current would flow nearly three hundred yards. If, then, we assume, instead of the estimate of Mrs. Conly, that it was running three or four minutes, that it was flowing only a single minute, then we have a mass of water three hundred yards long, and forty yards wide, with a depth of two yards. Hence this mass would contain twenty-four thousand cubic yards of water. From my observations, at several points above, I think it quite probable that there was this much, and unquestionably there must have been more than ten thousand cubic yards.

We are next to consider the interesting question as to how such a quantity of water was precipitated near the top of the Fishhawk Mountain, at the place where it fell. Of course it could not have fallen gradually as water descends from a cascade, because in that event it must have flowed away gradually, and would not have risen so high on the trees on the steep mountain side, nor could it have moved with such a force as to tear up the largest trees and carry them along with great masses of heavy rock. Such an effect would not have been produced even if it had not moved much faster than it was doing when seen two miles below at Conley's. All around the upper edge of the opening the roots of the trees were broken off abruptly, and the earth burst away perpendicularly down in such a manner as it could not have been done by a stream of water falling as we see it at a cascade. Everything indicated that there had been a sudden and violent shock, such as the fall of a large mass of water, precipitated from a great height, might have caused. In the centre of the opening fifteen feet of solid earth had been removed so as to expose the rock at the bottom, and this had been done so suddenly and violently that for a circle of seventy-five feet the earth in mass had been torn away leaving an upright, compact, perpendicular wall standing. If we think of this water as falling in a solid mass its force may be compared with that of a fifteen-inch cast-iron shot which, with the charge used for the monitor guns, striking perpendicularly, would scarcly have penetrated the earth down to the rock. And yet the height to which it rose immediately below would indicate that it came down in one immense mass.

If the column were thirty feet in diameter it would have been three hundred yards, or nine hundred feet in height, to enable it to contain as much as twenty-four thousand cubic yards. Even if we reduce the estimate to the lesser amount of ten thousand cubic yards only, still the column must have been more than three hundred feet in height, and if it had only this length and fell from a moving cloud, instead of falling in one place, it, partaking of the motion of the cloud, should have been rather strewn along the ground.

If a cloud were moving at the rate of eight miles an hour, and one is seldom seen that is not moving faster than this, it would travel more than two hundred yards in one minute. If, therefore, only six seconds elapsed while the column was falling, its top should have struck the earth sixty feet in advance of where the bottom touched. Probably only one or two seconds elapsed while it was falling after it first touched the earth.

The most difficult question, however, is how such a mass of water was so collected in the atmosphere. We know very well that the watery vapor in the air is condensed into drops, but then these drops when they attain a size that renders them barely visible to the eye, descend to the earth, and when they are the size of the common pea they fall with considerable rapidity. One cubic yard of water weighs more than sixteen hundred pounds. If a cubic yard were collected in the atmosphere, why should it remain suspended there until ten thousand other yards joined it, so that they all might come down together?

It may be said that a violent wind sometimes raises timber and other substances having a specific gravity nearly as great as that of water, and that, therefore, the wind might have held up this cubic yard. But we know that air only seems capable of thus sustaining heavy bodies when it is in violent motion, and the tendency of such motion is to scatter water, rather than retain it in masses. Sand and dust, when raised by the wind, are scattered about instead of being collected into solid masses. Again, if water at a high elevation starts downward in a body before it falls far it divides into drops. The cascade at Lauter-Brunnen, after a descent of nine hundred feet, falls in a shower, If, therefore, it be assumed that this water was in some mode collected together in the upper part of the highest cumulous cloud ever observed, in a descent of three or four miles through a moving and probably stormy atmosphere, how was it that it retained its compact form? But, then, to account for its having been collected in the upper regions is quite as difficult as to explain how it should be gotten together below. The air above being much more rarified would offer even less resistance to the passage of the water through it, and its fall therefore ought to be only the more rapid. To render this point clearer, let the following facts be considered: If air at a temperature of seventy-five degrees Fahrenheit be saturated with water, it would, if cooled down to thirty-five degrees, let go a portion of that water. It has been calculated that the amount thus liberated, compared with the volume of air, is so small that a single cubic yard of water will only be furnished by 62,500 yards of air. If we assume for the temperature of the air in that region seventy-five degrees, at the height of three thousand feet, we shall probably be not far out of the way. If that air, by being elevated to a great height, or by some other means, were cooled down to thirty-five degrees, or but little above freezing, it would give out its water in the proportion above stated. Let it be assumed, then, that a cloud, the base of which was three thousand feet above the sea, extending upwards for three miles. Then suppose a section of it in the form of a square pillar, the base of which was one yard square, to be extended up three miles, in this pillar there would

be contained five thousand two hundred and eighty cubic yards of air. If this were cooled down forty degrees, or from seventy-five degrees to thirty-five degrees, it would liberate a quantity of water. If all the water thus condensed were collected together it would be insufficient to make a cubic yard of water. In fact twelve such columns would be required to furnish, in this manner, one cubic yard of water. Again, when this first column had lost its water it must be moved out of its position to give the other columns an opportunity to take its place in succession, and in their turns give up their water to produce one single cubic yard.

Again, as to the water condensed in the upper portions of the air, some time must be allowed it to descend through three miles of space. A cannon shot moves at the rate of about one mile in five seconds, and would require fifteen seconds, therefore, to pass through three miles of space. But as we see even the larger drops descending near the earth it is evident that they are moving many times slower than this speed. Certainly they would require more than one minute to make this descent of three miles. But why should the drops in the lower part of the column not descend and fall in advance of the others, as we see the rain do? But again, this water in the lower part of the pillar must wait until each one of the twelve pillars has had time to thus give up its water, and this would require twelve minutes. And why, it may be asked, does the water at the lower part of the cloud wait in mass for this operation to be completed? And then when one cubic yard of water has been collected what is to sustain it until ten thousand more cubic yards join it before it commences its descent to the earth? To obtain this amount of ten thousand cubic yards of water a volume of air must be drained equal to a mass of three hundred and forty-seven yards square and three miles in height. How is all this water to be gotten together in a single mass?

It is said, however, that storms dash the clouds together and that the water is thus concentrated. But each portion of the air resists pressure from that which surrounds it, and of course retains the drops of water suspended in it, so that however the clouds may be moved along by the wind the rain drops will be carried about with them. It is not seen that in stormy weather, at the surface of the earth, rain is any more concentrated than when it falls in calms. But as the clouds from which water-spouts fall often take the form of inverted cones, or are funnel-shaped, it is by some supposed that the water is thus collected and discharged at the point. A funnel made of metal or glass will collect drops that fall on it and convey them by the force of gravity down to the centre, but clouds have not manifested that capacity. On the contrary it is seen that drops of water fall through clouds, whatever may be their shape. There has been no mention of any cloud so dense that the water would run along its surface.

The point may be illustrated by this case: If a bucket be filled with muddy water and allowed to remain at rest for a while the mud will settle, but it will be seen to constitute a stratum over the bottom of the vessel. If, on the other hand, the water is shaken violently the mud remains diffused through the water. Even if a rotatory motion is

given to the water, by stirring it around with a stick, this motion will not cause the mud to form a column in the centre of the vessel. Why then should a cloud with a whirling centrifugal motion collect so great a mass of water together? In fact the centrifugal motion sometimes manifested would tend necessarily to throw the drops of water, by reason of their specific gravity, away from the centre of the moving mass instead of bringing them together. If the whirling motions were so rapid as to produce a complete vacuum at the centre (a condition probably in fact never produced) all the water being denser than the air must be driven further outward by the centrifugal force. But even if it were miraculously collected in the centre, the particles, as they reached the vacuum, would only fall the more rapidly, in fact as fast as lead or any other heavy substance would do, instead of waiting there for other particles of water to join them before they started downward. These suggestions are made to render it evident that the mechanical force of whirling clouds is not sufficient to account for the phenomena observed.

We must find some force capable of bringing together instantly, as it were, the water contained in a large volume of air, or else an influence must be ascertained sufficiently potent to counteract the most constant and generally recognized force in nature, namely, the force of gravity. As the atmosphere is the only recognized source from which this water could be collected, it must, therefore, have been instantly drawn together, or if it were slowly collected, then the force of gravity must for a time have been suspended, or counteracted while the process was in progress, and until it was completed.

Several writers have attributed water spouts to electricity, and have referred to the fact that they were, in some instances, accompanied with remarkable displays of lightning. But it is also true that in other cases no extraordinary electrical phenomena were observed; and even if much electricity was manifested, there might be a question as to whether it might not be merely an effect, rather than a cause. Electricity, however, resembles water spouts in this respect: that they are both involved in mystery. Where a force is of such a character that it cannot be defined, or limited, there is room to exaggerate its powers. Sir Walter Scott said that every remarkable event in Scotland, the authorship of which was unknown, was attributed by the people either to Sir William Wallace, to the great magician, Michael Scott, or to the devil. Electricity and the Prince of Darkness have this common quality, that they are both enveloped in great mystery, and it might be added, too, that they possess this further resemblance, that close contact with either is shunned rather than courted.

From the fact that the leaves and like fragments of wood, close to the line of the opening, where the spout had fallen, were not moved, it was evident that there was no commotion in the atmosphere there. Any considerable disturbance or agitation that it underwent must have been at least above the tall trees standing around.

But the difficulty of explaining this is rather increased when we remember that probably more than fifty similar falls occurred on that day within an area of thirty miles in length by twenty broad. On the

opposite side of the Fishhawk mountain, and only a few hundred yards distant, there fell another water spout. Though I only saw its furrow or channel from a distance, yet it appeared to present, and is represented as showing, similar features to the one I have described. Two smaller ones fell two miles above Mr. Conley's. There were eleven in all that fell on the northern or northwestern side of the Blue Ridge, while credible persons tell me that there must have been forty or fifty that fell on its south side in portions of North and South Carolina. As far as they were described to me the features appeared to have been similar to the one I examined. Those on the south side of the Blue Ridge are represented to have fallen between the hours of twelve and one o'clock, while Mr. Conley and his wife said that which I examined fell at half-after three o'clock. The condition of the elements, which produced those phenomena, on that day extended over an area of six hundred square miles. That region has been settled by white people for more than fifty years, and within that period there have been many stormy days and many heavy rains, with freshets, and yet in that time no other water spouts had fallen. Even if such had fallen within the last three or four centuries the traces would be still visible. Why should such a condition have then existed on the 15th of June last?

But, again, there has been one other remarkable fall of water spouts in the western part of North Carolina. On the 7th day of July, 1847, at a place in what is now Clay county, nearly due west from Mr. Conley's and about forty miles distant, there fell a number of water spouts.

Though I only have seen the channels cut by them at a distance, yet they have been well described to me. Silas McDowell, Esq., a highly intelligent gentleman of Macon county, visited the locality soon after the fall and gave me a minute description of the appearances, which he has since repeated to me. Four miles north of Fort Hembrie, in Clay county, is a little mountain known as Fires Mountain. It is probably three thousand feet high, but as I have not seen it for many years I may be mistaken. Mr. McDowell counted thirteen spouts which had fallen, at short distances from each other, around the top of the mountain. He described more particularly the largest one. There was, just where it fell, an opening ten or fifteen feet deep, cut perpendicularly to the solid rock. He said it seemed to have fallen with such force that lumps of mud had been thrown up on the trees standing around for some distance, but that just around the opening the ground showed no sign of disturbance, and he especially expressed his surprise at the fact that the leaves all around the opening, within less than a foot of it, and in fact at its very edge lay in their places. His statement corresponds with what I saw at the place near Conley's. Mr. McDowell said that he followed the course of the water to the foot of the mountain, and that it had carried away everything down to the solid rock. Some of the smaller spouts had joined this one, and at the base of the mountain there was a pile of timber, and other debris, an[illegible] hundred feet high, in which were seen trees of one hundred feet long[illegible] some of them with their roots upward. Mr. McDowell says the furro[illegible]

made by these several spouts varied in width from sixty feet down to twelve feet.

Dr. B. W. Moore says that he and his brother counted a much larger number of these spouts, and that the ground over which they fell was two miles in length by one in breadth. He says that though he lived five miles from the place, and though no lightning struck near him, yet both he and his mother felt very much excited, as though they had been highly electrified. The day has been described as being hot, sultry and close until about four o'clock in the afternoon, when two clouds met at the top of the Fires Mountain. After they came together there was a whirling and spinning around in them, while they covered the top of the mountain, and presented a dark mass, and seemed to divide into fragments in whirling motion.

It seems from this statement that the phenomena were, in most respects, similar to those exhibited in the occurrences of last June. The fact, in both instances, that the leaves and light brush close around the openings were undisturbed, proves that there was no violent agitation of the air at the surface of the earth. When these facts are presented persons will, in some instances, be inclined to attribute the phenomena to the clouds striking against the mountains, but neither the Fishhawk nor the Fires Mountain is, perhaps, as much as four thousand feet in height, while there are in North Carolina several hundred higher, and not less than fifty which rise six thousand feet above the sea level, and yet none of these higher mountains have been thus visited, exposed as they are to storms and the contact of clouds. Again, it is well known that water spouts are seen more frequently at sea than on land.

So many facts similar to those I have described have been noticed that they cannot fairly be denied. A century ago so-called scientific men, because they could not account for such facts, denied that meteoric stones fell to the earth, and resorted to ingenious theories to explain how it happened that people imagined they had seen them fall. At this time no one doubts but that metallic and stony masses do fall to the earth. So now, if some satisfactory explanation can be given of the origin of water spouts, men will not only recognize the fact of their existence, but become ready to accept as true, perhaps, the statement of the fall of frogs, fish, and even of snakes, from the upper regions of the atmosphere. Until this has been done, however, these phenomena will rather remind men of the declaration in Genesis that "the waters below the firmament were divided from the waters above it," and "that the windows of heaven were opened" at the period of the deluge.

VOLCANIC ACTION IN NORTH CAROLINA.

LECTURE DELIVERED BEFORE THE WASHINGTON PHILOSOPHICAL SOCIETY, MAY, 1874.

By Hon. T. L. CLINGMAN.

More than thirty years ago my attention was directed to statements that a certain mountain in the northern part of Haywood County, North Carolina, was, at intervals of two or three years, agitated and broken into fragments along a portion of its surface. In the latter part of the year 1848, I visited the region, and soon afterwards wrote a description of the mountain, which was first published in the *National Intelligencer*, of the date of November 15th, 1848. As the article occupies two or three columns of the paper, giving a minute description of the locality, its minerals, and the appearance as presented at that time, with suggestions as to the probable cause of the phenomena, I will not detain you with its reproduction.

The material facts may be briefly stated as follows: Between the Blue Ridge, which in North Carolina separates the waters falling into the Atlantic, from those discharged into the Mississippi, and the great chain on the Tennessee border, designated in its course by such names as Iron, Unaka and Smoky, there is an elevated plateau of more than two hundred miles in length, with an average breadth of fifty miles. The beds of the larger streams are two thousand feet above the sea, and the general level of the country, exclusive of the mountain ranges, may be estimated at twenty-five hundred feet above tide-water.

Geologically considered, it is next to the Lake Superior region, regarded as among the oldest on the surface of the globe. Granite in its varieties is seen in many places, but the predominating surface rocks are of the older metamorphic strata, gneiss, and mica slate are the most prevalent, though hornblendic and magnesian rocks are abundant, with occasionally large veins of quartz, and indeed such a variety of minerals as perhaps no other region of equal extent produces.

Haywood county joins the State of Tennesse on its northern border, and the seat of the disturbance is within less than twenty miles of the line of that State. A considerable range of mountains extends north and south along the line which separates the counties of Buncombe and Haywood. From the west side of this extends a ridge which terminates near the head of Fines creek. A quarter of a mile from its western end, as one moves up it towards the east, is the locality referred to. The effect of the disturbance is visible near the crest of the ridge and extends

in a direction nearly due south, down the side of the little mountain, four or five hundred yards, to the level ground, and across it for some distance and along the elevations beyond. The whole extent may be a mile in length, with a breadth of not more than a couple of hundred yards at any point. The top of the ridge, where evidences of violence are seen, is perhaps three or four hundred feet higher than the ground below. There are cracks in the solid granite of which the ridge appears to be composed, but the chief evidences of violence were observable a little south of the crest. From thence along the side of the mountain as one descends, there were chasms, none of them above four feet in width, generally extending north and south, but also occasionally seen in all directions. All the large trees had been thrown down. There were a number of little hillocks. the largest eight or ten feet high and fifty or sixty feet in diameter. They were usually surrounded by what appeared to have been a narrow crevice. On their sides the saplings grew perpendicularly to the surface of the ground, but obliquely to the horizon, making it manifest that they had attained some size before the hillocks had been elevated. I observed a large poplar or tulip tree, which had been split through its centre, so as to leave one-half of it standing thirty or forty feet high. The crack or opening under it, was not an inch wide, but could be traced for a hundred yards, making it evident that there had been an opening of sufficient width to split the tree, and that then the sides of the chasm had returned to their original position without having slipped so as to prevent the contact of the broken roots. As indicating the sudden violence with which the force acted, a large mass of detached granite afforded a striking illustration. From its size I estimated that it might have weighed two thousands tons. It seemed from its shape to have originally been broken out of the side of the mountain above, and to have rolled in mass a hundred yards downward. It lay directly across one of the chasms two or three feet in width, and had been broken into three large fragments, which, however, were not separated a foot from each other. The irregularities of the lines of fracture were conformable, and rendered it certain that the mass had been broken by an instantaneous shock of great violence, which did not continue to act long enough to remove the fragments to a distance In like manner a blast of gunpowder often breaks a rock into fragments, without removing the pieces out of their places, the narrow fissures caused by the explosion, permitting the gasses to escape easily. All persons who saw this locality immediately after shocks spoke of the fact that every stone or fragment of wood had been lifted out of its former bed.

When I was there I was told that three years had elapsed since the last previous shock. They were first noticed about the year 1812, and usually repeated at intervals of two or three years. In 1851, I visited the locality again, having been informed that a feeble jar had occurred. As soon as I arrived at the locality, I was struck with the truthfulness of what many persons had told me, that after each shock the appearance of the place was so much changed that it did not at all resemble itself. On this occasion, though the shock had been a feeble one, I found the appearances very different. The greatest evidences of violence were near the foot of the ridge, the branch having been somewhat turned out